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ABSTRACT

Designed as a resource guide for a school district's governance team, this publication provides descriptions of 20 best district practices and 11 national demonstration projects on academic-vocational integration. It enables board members and superintendents to envision how the curriculum integration of academic and vocational education occurs on a districtwide level. The publication is national in scope and features a wide variety of school districts and their commitment to achieving the integration of academic and vocational education. School districts have been selected because of the uniqueness of their strategies and the breadth or depth of their efforts. The entries highlight a cross-section of school districts in terms of size, type, and geographic location. Information provided on the best district practices includes state, contact person with address and telephone number, district description, integration features, integration narrative, fiscal notes, and lessons learned. Featured states are as follows: Kentucky, Washington, California, Texas, Massachusetts, Georgia, South Carolina, Arkansas, Oregon, New York, Minnesota, Wisconsin, Maryland, Oklahoma, and Michigan. The information provided on the national integration demonstration projects includes the following: program title, project title, contact person with address and telephone number, program narrative, and fiscal notes. A summary is provided of effective models of curriculum integration. A glossary is appended. (YLB)

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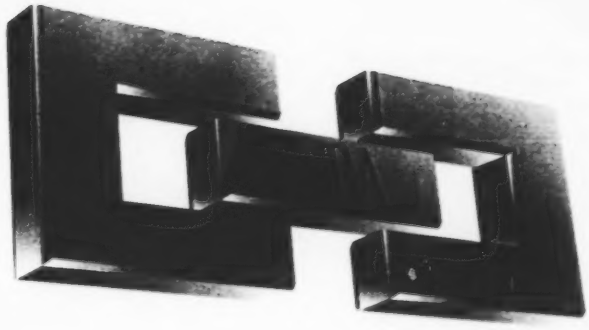
Increasing Rigor and Relevance: Linking School-To-Career

Best District Practices



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Increasing Rigor and Relevance: Linking School-To-Career

Best District Practices

California School Boards Association

1995

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In recognition of the essential policy-making role of school boards, the United States Department of Education awarded the California School Boards Association, through the California School Boards Foundation, a multi-year grant to create a training program which leads school districts to developing a knowledge of the concept of integrating academic and vocational curricula and the strategies school boards can apply to bring about integration in their school district. This project, "Integrating Academic and Vocational Learning: The Essential Policymaking Role of School Boards," is one of only eleven nationwide which was authorized in 1994 by the Carl D. Perkins Vocational and Applied Technology Education Act through the U.S. Department of Education's Integration of Vocational and Academic Learning Program. It is unique in that it recognizes the school board's critical leadership role in directing systemic change in a school district.

Best District Practices

Table of Contents

Introduction 1

Part I. Best District Practices 3
Bell County School District, Kentucky 5
Central Valley School District, Washington 6
East Side Union High School District, California 7
Elk Grove Unified School District, California 9
Fort Worth Independent School District, Texas 10
Greater Lowell Regional Vocational
Technical School District, Massachussetts 16
Hall County School District, Georgia 18
Lexington County School District , South Carolina 19
Lucia Mar Unified School District, California 21
Pasadena Unified School District, California 23
Pine Bluff School District, Arkansas 25
Reynolds School District, Oregon 27
Rochester City School District, NewYork 29
Rothsay Public Schools District, Minnesota 31
San Juan Unified School District, California 33
School District of Lacrosse, Wisconsin 35
Seattle Public Schools District, Washington 37
St. Mary's County Public Schools District, Maryland ... 38
Tulsa Public Schools District, Oklahoma 40
Van Buren Intermediate School District, Michigan 42

**Part II. National Integration
Demonstration Projects** 43
California School Boards Association 45
East San Gabriel Regional Occupational Program 46
El Paso Community College 47
Los Angeles County Metropolitan
Transportation Authority 48
Rindge School of Technical Arts 49
Sonoma State University Academic Foundation 50
Southern Regional Educational Board 51
University of Arizona 52
University of Southern Colorado 53
University of Wisconsin-Madison 54
Valencia Community College 55

Effective Models of Integration 56

Glossary 58

Introduction

integration: *a coordinated instructional system of enhanced academic and technical education. This system promotes an understanding and application of knowledge and skills that prepares all students for lifelong learning and success in their life's work.*

In 1994, California Schools Boards Association (CSBA) was selected as one of eleven national demonstration projects on the integration of academic and vocational learning. CSBA's project, "Integrating Academic and Vocational Learning: The Essential Policy-making Role of School Boards," recognizes the critical leadership role that board members and superintendents as a governance team have in achieving curriculum integration on a district-wide level.

As part of the project, CSBA developed specific training and supporting materials for school board members and superintendents that provide implementation strategies and effective policies necessary to integrate academic and vocational education. Along with a curriculum outline and training manual, "BEST DISTRICT PRACTICES" was designed as a resource guide for a school district's governance team. It was written to enable board members and superintendents to envision how the curriculum integration of academic and vocational education occurs on a districtwide level.

"BEST DISTRICT PRACTICES" is national in scope and features a wide variety of school districts and their commitment to achieving the integration of academic and vocational education. School districts were selected because of the uniqueness of their strategies and the breadth or depth of their efforts. The entries highlight a cross section of school districts in terms of the size of the district, type of the district, and the geographic location. In addition, "BEST DISTRICT PRACTICES" describes the eleven 1994 national demonstration projects on integration, and provides a summary of effective models of curriculum integration and a glossary of terms.

"BEST DISTRICT PRACTICES" can serve as an important tool in assisting a school district's governance team in beginning to achieve an integrated curriculum which will ensure that academically rigorous and relevant learning occurs for all students.

Part I

Best District Practices

Bell County School District

State: Kentucky
Contact Person: George W. Thompson, *Principal*
Bell County High School
Bell County School District
Route 1, Box 88
Pineville, Kentucky 40977
(606)337-7061

District Description:

Bell County School District lies in the southeast corner of Kentucky. The majority of the district's 3,600 students are Caucasian. Eighty-five percent of the students qualify for a free or reduced lunch. Fifty-two percent of the students receive Aid to Families of Dependent Children (AFDC). The district consists of one high school, one middle school and ten elementary schools.

Integration Features:

- elimination of general and low-level tracks;
- team teaching;
- block scheduling;
- career majors/clusters;
- tech-prep;
- staff development.

Integration Narrative:

Immediately following the passage of the Kentucky Education Reform Act of 1990 which advocated high standards for students, Bell County became involved with tech-prep. As a result, the district eliminated its general and low-level tracks, encouraged team teaching, and switched to block scheduling.

Bell County requires that its 8th grade students attend a 12-week course on career choices. The students then decide upon a career major/cluster which will be the focus of their studies. Leading to a tech-prep degree, student majors may be in one of the following areas:

- Personal Services - law enforcement, child care, nutrition, cosmetology, paralegal;
- Health Occupations;
- Business;
- Industrial Technology - transportation, mining technology, aircraft;

The district's tech-prep program leads to an associate degree or two-year technical diploma at Southeast Community College, Kentucky Tech, Lincoln Memorial, Eastern Kentucky University, and Cumberland Valley Health Occupations Center.

As a result of Bell County's integration efforts, the district's ACT scores have increased in the last three years. Also, AP scores increased 25% in the past two years. Huge gains were made in the statewide assessment scores, although the scores are still low.

In the future, Bell County hopes to begin an academy. Additionally, Bell County seeks to examine changing it's graduation requirements which may mean including a service learning minimum, an extracurricular activity, and a graded project which reflects Kentucky standards.

Fiscal Notes:

Bell County's biggest expense was the technical assistance and the professional staff development it provided. Besides district resources, Bell County has received assistance from the National Alliance for Restructuring Education and the Southern Regional Education Board.

Lessons Learned:

1. Block scheduling for classes resulted in less lecturing and more hands-on relevant learning.
2. The block schedule has allowed teachers to team-teach or collaborate and to receive on-going training.
3. It is vital that the board has documentation regarding the district's improvements.

Central Valley School District

State: Washington
Contact Person: Mike Pearson, *Director*
High Schools/Professional-Technical Education
Central Valley School District
19307 E. Cataldo
Greenacres, WA 99016
(509)922-6700

District Description:

The Central Valley School District accommodates 10,000 students in 13 elementary schools, five junior high schools and two high schools. A third of the students receive a free or reduced lunch. Almost 95% of the district's students are Caucasian.

Both of the district's three-year high schools have an enrollment of about 1,250 students. Approximately 68% of graduates continue beyond high school with additional education in colleges, universities, and technical and vocational training.

Integration Features:

- career paths;
- staff development - Project Vanguard;
- business and community linkages.

Integration Narrative:

Central Valley School District's integration efforts began with the establishment of the Student Career Opportunity Paths in Education (SCOPE) program in 1991. Begun as a pilot program at one of the district's high schools, SCOPE used the career path model as the approach to achieving integration. Through SCOPE, students are provided with a choice of curriculum and a 5-year educational plan combining academic requirements, vocational/technical training, college work, apprenticeship or military training.

Key components of the SCOPE program:

1. Incorporates a variety of learning programs.
2. Vocational and technology programs provide high skill instruction and experiences to enable students to enter advanced post-high school preparation for careers.
3. Every curriculum includes career infusion activities and instruction to connect learning with relevance and practicality of career interests.
4. Teachers develop integrated lesson plans and activities.
5. Students are placed in a career path based on a comprehensive interest inventory.
6. Businesses play an important role in classroom activities and provide unique opportunities for students to see what the real world is like.

The six career paths around which the curricula revolves are:

- Business, Marketing and Management;
- Business Communications and Operations;
- Technology in Society;
- Engineering, Science and Medical Services;
- Creative and Applied Arts;
- Social, Health and Personal Services.

One of the issues the school district will address to build upon the impact of its integrated efforts is that of the scheduling of the school day. The district is also intending to implement career paths in the other district's high school.

Fiscal Notes:

The district received funds from the state of Washington for the piloting of its career path program. This amount varied from $30,000 to $130,000 per year during the course of four years.

In addition, the district utilized Project Vanguard (see page 50) to provide the staff development on integration. The district also relied upon local businesses to provide their expertise and work-based learning experiences.

Lessons Learned:

1. Restructuring must include a vision from the top and a commitment to implement from the bottom.
2. Keep the community informed.
3. Understand that it is easy to quit and try something new; it is harder to continue developing efforts.

East Side Union High School District

State: California
Contact Person: Dr. Lois Freeman
Assistant Superintendent of Instruction
East Side Union High School District
830 North Capitol Avenue
San Jose, CA 95133
(408)272-6474

District Description:

East Side Union High School District is the second largest high school district in California. It consists of fourteen high schools, serves more than 22,000 students, and represents an economically diverse population. Hispanic and Asian/Pacific Islander students each represent approximately 38% of the population. Caucasians compose 20% of the district's students while African-Americans represent 7%.

Integration Features:

- partnership academies;
- staff development;
- career pathways;
- tech-prep;
- team teaching;
- students in common;
- career guidance;
- student mentorship / internships;
- linkages with ROP, Jobs For America's Graduates;
- portfolios.

Integration Narrative:

East Side Union High School District's integration efforts began with the establishment of partnership academies in 1985. Staff development time was provided during the summer to work on curriculum integration. During the last five years, the district has concentrated on developing career pathways.

East Side Union High School District compiled all its integrated efforts on a matrix which reflects that the district has connected its integration efforts to the following:

- four approved tech-prep programs;
- partnership academies emphasizing team teaching students in common and employability skills certification;
- at least one career pathway in every high school — some of the pathways involve the Regional Occupational Programs (ROP's);
- student mentorships/internships;
- career guidance delivered by parents and staff at the feeder elementary school districts.

East Side Union High School District currently operates twenty career strands using basic standards consistent with Goals 2000, Chapter 1, and the Elementary and Secondary Education Act. Every strand has three career paths, i.e., the district's manufacturing program has a technical side, business side, and a tech-prep side. The core of each path is identical, consisting of educational and occupational skills. The difference lies in the electives.

Continued

East Side Union High School District

Continued

More than 3,000 students, or approximately 15% of the student population, experience an integrated curriculum. Approximately 90 teachers are involved in the integration efforts.

Also connected with its integration efforts is the district's involvement with Jobs for California's Graduates, an affiliate of Jobs for America's Graduates. This is a statewide pilot effort which has allowed the district to use and work with Job Training Partnership Act (JTPA) funds to assist seniors who are at risk of graduating with no employability skills. The program provides job specialists at 7 sites who each have a 40 student caseload. The job specialists help students through the educational system to build employability skills during the students' senior year and the nine months immediately following.

A school-to-career consortium composed of educators, business representatives, parents and community organizations was recently started to provide additional internships and teaching locations, to assist with defining employability skills, certification and program standards; to gain support for requesting employability certificates and portfolios; and to generate more industry support.

East Side Union High School District will continue to centralize and promote its efforts on a districtwide level. Along with its efforts to allow students to easily choose a career pathway at different school sites, the district is promoting the use of portfolios systemwide. Additionally, the district intends to utilize teachers currently involved with integration to recruit other teachers as members of instructional teams.

Fiscal Notes:

The district has been able to expand its integrated efforts utilizing several methods. First, it chose not to duplicate every career pathway at every school. Second, through its focus on staff development and peer teacher recruitment, its integrated efforts continue to expand yearly. Lastly, it has connected its integrated efforts and funding with ongoing programs, i.e., ROP, Jobs for California's Graduates, and the Santa Clara school-to-career consortium.

Lessons Learned:

1. It is necessary to provide ongoing staff development opportunities for teachers.
2. Pre-packaged integrated curriculum is not a wise investment.
3. Partnerships with other agencies have helped support integration efforts.
4. It is essential to utilize every resource, rather than duplicate efforts.
5. Accountability is important and helpful in promoting and achieving integration.

Elk Grove Unified School District

State: California
Contact Person: Christy Moustris, *Director*
Educational Options and Vocational Education
Elk Grove Unified School District
8820 Elk Grove Blvd.
Elk Grove, CA 95624
(916)686-7726

District Description:

Elk Grove Unified School District lies in Sacramento County. A growing area and school district, Elk Grove Unified School District serves more than 34,000 students at the 25 elementary, 4 middle and 4 high schools. Almost 50% of the students are Caucasian; 21% are Asian-American; 18% are African-American and 14% are Hispanic. More than 20% of its students receive Aid to Families of Dependent Children (AFDC) and more than 30% receive a free or reduced lunch.

Integration Features:

- elimination of basic and remedial math;
- technology education;
- articulated agreements;
- applied academics/ tech-prep;
- partnership academies;
- staff development;
- portfolios;
- distance learning;
- internships for students and teachers;
- teacher monitoring.

Integration Narrative:

Integration efforts in the Elk Grove Unified School District were started in 1988. In 1989, the district received a high school integration grant and developed a career path concept for each career vocation subject area. This, however, was not implemented.

Elk Grove Unified School District raised its graduation requirements by mandating algebra and geometry. The district also has a technology graduation requirement.

All courses in the Elk Grove Unified School District business divisions are now articulated with a local community college district. These courses, in turn, are articulated with the nearby state university. Additional articulation agreements exist with another community college for its courses in: Child Development; Food Service and Automotive Technology.

Elk Grove Unified School District has implemented an applied academics course, the Principles of Technology component of the tech-prep configuration, at one of its high schools.

At least one partnership academy exists at each of the Elk Grove Unified School District's high schools. All academy team members participate in the California Department of Education's curriculum integration workshops. Academy teachers require the completion of student portfolios.

A distance learning lab and the Internet were installed at one of the district's academies. Those academy students are concurrently enrolled in a local community college's medical technology course.

A limited number of internships for academy teachers and students are currently being pursued. Academy teachers are also available as mentor teachers to other teachers in the district.

One of the academies is currently working with a special project which provides an integrated curriculum through the use of industry skill standards.

Fiscal Notes:

Most of the district's integration efforts are funded with Carl D. Perkins Funds. In addition, the district utilizes funds from a private foundation, the state, and district general funds.

Lessons Learned:

1. Board members have a critical role in advocating to the community that integration is about raising academic standards.
2. It is important, but difficult to obtain A – F credit for integrated courses.
3. Teachers really want to know what skills businesses need from their employees and are willing to change their curriculum to help develop those skills.

Fort Worth Independent School District

State: Texas
Contact Person: Deborah Russell
School/Community Development Specialist
Project C²
Fort Worth Independent School District
100 N. University Drive
Fort Worth, Texas 76107
(817)871-2401

District Description:

Fort Worth Independent School District is a unified school district in the Fort Worth metropolitan area. It is the fourth largest school district in Texas with 111 schools including 21 middle and 12 high schools. More than 70,000 students are served in this district covering more than 200 square miles. The student population is ethnically diverse with 34% African American, 33% Hispanic, and 30% Caucasian students.

Integration Features:

- business partnerships;
- linkages with local institutions of higher education;
- K - 12 focus;
- internships for students and teachers;
- teacher mentoring;
- elimination of basic and remedial math;
- portfolios;
- The New Standards Project;
- technology education.

Integration Narrative:

In 1989, under the initiative of a school board member and the superintendent, Project C² was formed. The project name refers to Fort Worth's "Community, Corporations, and Classrooms" working together to transform Fort Worth's schools so that all the district's students would acquire the knowledge, skills and attitudes necessary for success in school, in the work place, and in life. Other partners in Project C² include leaders of the local institutions of higher education, the mayor and other civic leaders, local and national foundations, and the National Alliance of Business.

The Project C² partners recognized that three tasks were fundamental to its efforts:

1. define success in the workplace;
2. establish performance standards;
3. link classroom instruction to real world application.

In 1989, 25 local Chief Executive Officers worked with Fort Worth Independent School District (FWISD) to formerly initiate Project C². More than 250 additional business owners joined them because of their shared difficulty in finding qualified personnel. They committed more than 3,000 workers to analyze almost 800 jobs in more than 300 occupations for the necessary skills, levels of proficiency, and salaries.

The analysis provided information as to the set of skills FWISD students needed upon graduation. Several programs, strategies, and components of Project C² were then developed to help FWISD students achieve those essential skills. They are based upon the following "integration" characteristics:

1. improving the match between what the work place requires and what students are taught in the classroom;
2. improving the match between how students are taught and how they are expected to perform at work;
3. increasing student motivation to work hard and succeed in school.

The programs and strategies developed include:

- Vital Link - In 1993-94 this project provided more than 3500 incoming 7th graders and their teachers with real life work experiences for a week. The work experience is integrated with classroom learning.
- Integrated Curriculum Projects - This effort assigns specially designated teachers to develop integrated curriculum projects and mentor other teachers in order to assist them in their efforts to integrate vocational education and academic learning.
- Equity 2000 - The goal of this program is to substantially increase the number of economically disadvantaged and minority students who attend and

Continued

Fort Worth Independent School District

Continued

succeed in college by improving academic preparations and raising student expectations and motivations. The first step of this program was to eliminate basic or remedial math for freshmen and to instead require them to take algebra.

- Applied Learning - This effort makes the content and process of learning more directly related to the requirements of the workplace. It includes the creation of Applied Learning Center school sites and a special staff development program for teachers.
- The Portfolio Project - This project is designed to develop a competency-based student portfolio and facilitate its district-wide usage.
- The New Standards Project - With the assistance of the National Center on Education and the Economy and with the Learning Research and Development Center at the University of Pittsburgh, the goal of this project is to develop a national assessment system that will include timed performance examinations, student group and individual projects, and student work portfolios.

Fiscal Notes:

When Project C' began, no funds were available. The district used existing funding or corporate grants for most of the project. Current operations were used as resources so that costs did not become a barrier. Corporations as well as local and national foundations have since been very generous in their support of Project C'.

The most expensive integration initiative has been the technology education component. More than $6 million for technology labs was spent for all 12 high schools and 14 middle schools over four years. In addition, computer labs now exist in all K-12 schools. All but six of the 108 campuses were retrofitted to accommodate Tech Labs. The average middle school cost was $150,000 - $175,000 and the average high school cost was double that amount.

The district's integration efforts began and continue as a co-directed effort led by a school district and a chamber of commerce official.

Lessons Learned:

1. A sustained effort to "stay the course" is essential.
2. Educating everyone — credentialed and classified staff, parents, and community members — was critical for the integration foundation and success.
3. The local survey on occupations and necessary job skills was the district's entry key into the community.
4. Appeal to the business community for their experience and expertise — they will prove to be a valuable resource.

Attachments:

Vital Link Scope and Sequence. The following chart demonstrates FWISD's vision of integrating academic learning and vocational education in grades K-12.

Fort Worth Independent School District

Grade	Career Awareness	Curriculum	Guidance/ Counseling	Leadership Counseling
K	Speakers Portfolios	Economic Readiness/J.A.	Classroom Guidance Parent Education Personal/Social Counseling	Student Council
1	Speakers Career Day Portfolios	Our Families/J.A.	Personal/Social Counseling Parent Education Classroom Guidance	Student Council
2	Speakers Career Day Portfolios	How does a Community Work?/J.A.	Personal/Social Counseling Parent Education Classroom Guidance	Student Council Safety Patrol Council
3	Speakers Career Day Interview Techniques Portfolios	Working in a City/J.A.	Academic Counseling Personal/Social Counseling Parent Education Classroom Guidance Standardized Testing	Student Council Safety Patrol Council
4	Speakers Career Day Interview Techniques Portfolios	State and Regional Economics/J.A.	Academic Counseling Personal/Social Counseling Parent Education Classroom Guidance Standardized Testing	Student Council Safety Patrol Council
5	Speakers, Career Day Career Shadowing Writing for the Community Portfolios	The National Economy/J.A. Business Basics/J.A. Junior University	Academic Counseling Personal/Social Counseling Parent Education Classroom Guidance Standardized Testing	Student Council Safety Patrol Council
6	Speakers, Career Day Career Shadowing Writing for the Community Portfolios, Professional Preview Program	The Global Economy/J.A. Project Business/J.A. The Economics of Staying in School/J.A. World of Work 2000 Interdisciplinary Unit	Aptitude & Interest Testing Academic Counseling Personal/Social Counseling Parent Education Classroom Guidance Standardized Testing	Student Council Student Leadership Conference

Vital Link Scope & Sequence

Community Service	Mentorships/ Internships	College Orientations	Video Conferences	Grade
				K
				1
				2
Service Projects				3
Service Projects	Mentorships, Shadowing Workplace Visits Campus Based Discussions/ Interviews Teacher Internship			4
Service Projects	Mentorships, Shadowing Workplace Visits Campus Based Discussions/ Interviews Teacher Internship	Junior University "I Have a Dream"		5
Service Clubs	Mentorships, Shadowing Workplace Visits Campus Based Discussions/ Interviews Professional Preview Teacher Internship	Paving the Way "I Have a Dream" EQUITY 2000 Project ABLE College/Career Resource Center		6

Fort Worth Independent School District

Grade	Career Awareness	Curriculum	Guidance/ Counseling	Leadership Counseling
7	Speakers, Career Day Writing for the Community Career Shadowing Vital Link Internship (Summer) Portfolios	Project Business/J.A. The Economics of Staying in School/J.A. FWISD Course Offerings	Aptitude & Interest Testing Academic Counseling Personal/Social Counseling Parent Education Classroom Guidance Standardized Testing	Student Council Student Leadership Conference
8	Speakers, Career Day Career Shadowing Interview Techniques Portfolios Writing for the Community	Project Business/J.A. The Economics of Staying in School/J.A., Algebra & Geometry Readiness, Academy FWISD Course Offerings	Aptitude & Interest Testing Academic Counseling Personal/Social Counseling Parent Education Classroom Guidance Standardized Testing	Student Council Student Leadership Conference
9	Speakers Career Shadowing Portfolios Mock Interviews and Simulations Writing for the Community	Project Business/J.A. Algebra & Geometry Readiness Academy FWISD Course Offerings	Aptitude & Interest Testing Academic Counseling Personal/Social Counseling Parent Education Classroom Guidance Standardized Testing	Student Council Youth and Government
10	Speakers Career Shadowing Portfolios Mock Interviews and Simulations Writing for the Community	Success Now/J.A. Applied Economics Junior Achievement Company FWISD Course Offerings	Aptitude & Interest Testing Academic Counseling Personal/Social Counseling Parent Education Classroom Guidance Standardized Testing	Student Council Youth and Government Legislative Session
11	Speakers Cooperative Research Mock Interviews and Simulations Portfolios Writing for the Community	Success Now/J.A. Applied Economics Junior Achievement Company FWISD Course Offerings	Aptitude & Interest Testing Academic Counseling Personal/Social Counseling Parent Education Classroom Guidance Standardized Testing	Student Council Youth and Government Legislative Session
12	Speakers Cooperative Research Mock Interviews and Simulations Portfolios, Apprenticeship Writing for the Community	Success Now/J.A. Applied Economics Junior Achievement Company FWISD Course Offerings	Aptitude & Interest Testing Academic Counseling Personal/Social Counseling Parent Education Classroom Guidance Standardized Testing	Student Council Youth and Government Legislative Session

Vital Link Scope & Sequence

Community Service	Mentorships/ Internships	College Orientations	Video Conferences	Grade
Service Clubs	Mentorships, Student Internship, Shadowing, Workplace Visits Campus Based Discussions/ Interviews, Professional Previews, Teacher Internship	Paving the Way I Have a Dream EQUITY 2000 Project ABLE College/Career Resource Center Duke Talent Identifications		7
Service Clubs	Mentorships ,Student Internship, Shadowing, Workplace Visits Campus Based Discussions/ Interviews, Professional Previews, Teacher Internship	Paving the Way I Have a Dream College Night EQUITY 2000, Project ABLE University Outreach Informational Seminars		8
I-CARE	Mentorships, Apprenticeships Student Internship Shadowing, Workplace Visits Campus Based Discussions/ Interviews, Professional Previews, Teacher Internship	College Night, "I Have a Dream" (MS)2, (H.S.+), EQUITY 2000 Youth Opportunities Unlimited University Outreach College/Career Resource Center Informational Seminars		9
I-CARE	Mentorships, Apprenticeships Student & Teacher Internship Shadowing, Workplace Visits Campus Based Discussions/ Interviews Professional Previews	College Night, "I Have a Dream" Informational Seminars (H.S.+), (MS)2 EQUITY 2000 College/Career Resource Center University Outreach		10
I-CARE	Mentorships, Apprenticeships Student & Teacher Internship Shadowing, Workplace Visits Campus Based Discussions/ Interviews Professional Previews	College Night, "I Have a Dream" Informational Seminars (H.S.+), (MS)2 EQUITY 2000 College/Career Resource Center University Outreach	Teleconferences Student Designed Teleconferences	11
I-CARE	Mentorships, Apprenticeships Student & Teacher Internships Shadowing, Workplace Visits Campus Based Discussions/ Interviews Professional Previews	College Night, "I Have a Dream" Informational Seminars (H.S.+), (MS)2 EQUITY 2000 College/Career Resource Center University Outreach	Teleconferences Student Designed Teleconferences	12

Greater Lowell Regional Vocational Technical School District

State: Massachusetts
Contact Person: Bill Burns *Cluster Chairperson*
Greater Lowell Regional Vocational Technical School District
230 Pawtucket Blvd.
Tyngsboro, MA 01879
(508)454-5411

District Description:

Located in northeastern Massachusetts, Greater Lowell Regional Vocational Technical School District covers four communities and consists of a single school, Greater Lowell Regional Vocational Technical School. The school serves grades 9-12 and provides post-graduate educational programs along with a strong emphasis on adult retraining. The voc-tech (vocational-technical) programs were designed to teach and train any and all who wanted a vocational and technical education regardless of ability. The school district serves a multi-ethnic and multi-cultural population.

Integration Features:

- competency-based;
- business and labor connection;
- career/cluster paths;
- staff development;
- team-teaching;
- internships, job shadowing, cooperative education, mentoring;
- school-based enterprises;
- portfolios;
- academy;
- emphasis on special education, bilingual education, and Chapter 1 courses.

Integration Narrative:

As early as 1979, competency-based instruction was adopted by Greater Lowell Vocational Technical School District and became the foundation for its integration efforts. Incorporated into the integrated instruction, students must demonstrate competencies in the following areas: occupation, knowledge application, personal skills, and employability.

An advisory committee composed of representatives of labor and industry, students, and parents has played an important role in the discussion of employability skills and core competencies. As a result of their input, a course on work ethics was created.

In the past four years, career/cluster paths have been developed. In-service meetings were held during which math and voc-tech teachers were teamed up by clusters to ensure integration.

Grade 9 is designed as an exploratory program. In the second half of the year, 9th graders select a voc-tech program or cluster to pursue. Voc-tech programs are organized utilizing the following cluster concepts:

- Construction Technology;
- Manufacturing, Transportation, Electronics and Design;
- Health, Personal Services and Related Arts;
- Marketing, Information Processing and Hospitality.

Continued

Greater Lowell Regional Vocational Technical School District

Continued

Each student in grades 10-12 specializes in their voc-tech program. The foundation for the cluster occurs in the 10th grade. Within the cluster, there may be a strand or major focus in grades 11 and 12. For example, the Information Processing cluster has 4 strands: microcomputer applications; accounting; programming; and word processing.

Internships, job shadowing, cooperative education and mentoring have also been incorporated into the education system. Cooperative education employers work with students during their 12th grade year and assist in student assessment and skill development. Many students transition smoothly into full-time employment. The school district works with a local bank which has an on-site branch. The school also operates its own retail stores in an in-school mall setting.

The cooperative education experience is evaluated in part using competency reporting and student portfolios. Greater Lowell Regional Vocational Technical School District hopes that its portfolios will serve as a vehicle for promoting and documenting integrated efforts. The portfolios were introduced as a pilot project for 9th grade and will be gradually phased in over all four years to provide a complete competency profile.

Recently, the school district began an academy integrating cosmetology, math, science, social studies, and English. The district intends to continue using the academy as a vehicle for integration. The district also has ensured that some degree of integration has been demonstrated in its special education, bilingual, and Chapter 1 courses. This effort serves as an important focus for the district.

Fiscal Notes:

Greater Lowell Regional Vocational Technical School has spent all public funds on its integration efforts. The bulk has come from state and federal funds; 30% has come from the local level primarily to support the curriculum development process.

Lessons Learned:

1. Successful integration must:
   - be connected to other mainstream reform efforts;
   - identify what individual people are supposed to do;
   - provide opportunities for curriculum development collaboration;
   - include all students and all teachers.
2. The school board must ensure that resources are provided or redirected to ensure that someone can direct the district's integration efforts.

Hall County School District

State: Georgia
Contact Person: Dr. Gwen Monday
Director of Curriculum
Hall County Schools District
711 Green Street, Suite 100
Gainesville, GA 30505-0298
(770) 534-1080

District Description:

Hall County School District lies north of Atlanta. The district's 16,000 students attend four high schools, four middle schools, and seventeen elementary schools. Eighty percent of the students are Caucasian. Less than 10% are Hispanic or African-American. Approximately 30% receive a free or reduced lunch and/or Aid to Families with Dependent Children (AFDC).

Integration Features:

- team teaching;
- staff development;
- applied academics;
- "High Schools That Work;"
- academic support;
- tech-prep.

Integration Narrative:

Over the past three years, Hall County School District initiated its integration of academic and vocational education by focusing upon one high school a year. At the site level, a small group of academic and vocational teachers would become partners. Staff development on integration was provided for the teachers to help them with their curriculum efforts.

Some of the district's academic teachers gave a presentation to the school board regarding applied academics. The school board later provided funding for teachers to develop the district's applied academic courses and supported the district's involvement with the Southern Regional Education Board "High Schools that Work" program.

The district has higher academic expectations for its students as a result of the integration occurring between academic and vocational education. To assist students in achieving those expectations a "zero period" was added to the school schedule to serve as a tutoring period, either before or after school so that students can receive the extra help they may need.

In addition to building upon its integration efforts, the district has begun planning its tech-prep program with neighboring school districts and institutions of higher education.

Fiscal Notes:

Over the past four years, state and local funds have been used to support the district's integration efforts. Materials and equipment cost $80,000. Staff development in applied teaching methods required $150,000.

The Chamber of Commerce served as a resource to the district by involving local businesses and industries to share their expertise. Parents and community members contributed much feedback and input into the district's integration efforts.

Lessons Learned:

1. Active learning is more effective than lectures.
2. Practical application can be shown in all subject areas when the integration of academic and vocational subjects occur.
3. Relevancy is very important in a child's education.

Lexington County School District Four

State: South Carolina
Contact Person: Sandra C. Sarvis
Assistant Superintendent
Lexington County School District Four
P.O. Box 569
Swansea, South Carolina 29160
(803)568-3886

District Description:

Lexington School District Four lies in a rural community, south of Columbia, in South Carolina. Approximately 70% of the population is Caucasian, and the other 30% is African-American. Many of the students come from families with a low socio-economic background.

The district serves 2,500 students in grades pre K-12 through two elementary schools, one middle school, and one high school. Over 50% of the students graduate from high school or proceed to post-secondary schools.

Integration Features:

- tech-prep;
- "High Schools That Work;"
- articulation;
- applied academics;
- eliminated general education courses;
- staff development;
- K-12 and beyond focus;
- comprehensive career guidance;
- authentic assessment.

Integration Narrative:

Prior to 1989, the school district had the highest dropout rate in the state. In 1989, Lexington School District Four became involved with tech-prep as one of three model sites in South Carolina for the Southern Regional Education Board's High Schools that Work Program. In 1990, it developed a five year implementation plan for changes in the school district; this plan emphasized the integration of academic and vocational learning. In 1991, it implemented the plan and worked on articulation, integration of academic and vocational content, instructional strategies, and staff development.

In two years, the district had met the goals of its five year plan. This included integrating the curriculum, instituting an applied academic program, reducing the dropout rate, and eliminating general education courses.

Central to Lexington School District Four's integration efforts was staff development. Beginning in 1990, math, science, and English teachers had to attend a two week summer institute or graduate course on applied academics. The district's high school teachers had two years in which to be trained; new teachers were allowed one year. In addition, staff development was linked with teacher evaluation.

Developing a well-articulated K-12 system based upon higher standards also continues to be critical to the district's current work. This is evident in a variety of methods including:

- the establishment of a Career Exploration Program at the middle school level;
- the establishment of an Advisor/Advisee program at the high school level and at Mentor/Mentee Program at the middle school level;
- training a cadre of teachers and administrators in integrated performance-based assessment strategies;
- 8th grade teachers assisting their students to create high school plans;
- middle school math teachers teaching pre-algebra to 7th graders and algebra for 8th graders;
- middle and high school English teachers convening together periodically to refine curriculum and plan together. (As a result of their meetings they developed K-12 reading list and recently compiled a summer school reading list.);
- eliminating ability grouping at the elementary level.

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Lexington County School District Four

Continued

Elementary school teachers teach integrated lessons, more and more, with a focus on career awareness and in heterogeneously grouped classes.

With its integration emphasis and focus on high expectations, Lexington School District Four in only a few years was able to reduce its 7.7% dropout rate to 1.0%. In addition, from 1990 - 1993, the district achieved significant gains in its English, science, and math scores as measured by the National Assessment of Educational Program (NAEP). As a result, the district has been named one of the Southern Regional Education Board's "High Schools That Work" Demonstration Sites. The district is also an Advanced Integration Model Site with Southern Regional Education Board.

Fiscal Notes:

The funds for Lexington's integration efforts largely came from the state's Carl D. Perkins Act federal funds and a grant from the Southern Regional Education Board. Funds were primarily used for staff development purposes.

Lessons Learned:

1. Once a structure is in place to support institutional changes, integration naturally continues from the excitement of the rigorous and relevant learning.
2. Staff development is key, and teacher buy-in and support is crucial to making integration happen.
3. The board's consistent support — particularly with the vision, articulation, administrative support, and fiscal support — allowed the district to make changes quickly and thoroughly.
4. The more changes that are made, the more the need for additional changes become apparent. Resistance to change is the greatest barrier which must be overcome if integration is to occur.

Lucia Mar Unified School District

State: California
Contact Person: Joseph K. Boeckx, *Superintendent*
Lucia Mar Unified School District
602 Orchard Street
Arroyo Grande, CA 93420
(805) 473-4300

District Description:

Lucia Mar is located on California's central coast. Lucia Mar serves slightly less than 10,000 students through its one high school, (a continuation and independent study school), three middle schools, and ten elementary schools. Two thirds of the students are Caucasian. The remaining third is largely Hispanic. One third of the students qualify for a free lunch while less than 5% receive a reduced lunch.

Integration Features:

- K-12 focus;
- partnership academies;
- applied academic materials;
- corporate partnerships;
- all students, including those with special needs;
- staff development.

Integration Narrative:

During the 1987-88 school year, the Lucia Mar Unified School District Board of Education instructed its superintendent to look into improving student performance in the district. During the next two years, the school district developed an improvement plan which included an aligned K-12 curriculum, higher standards for student performance, and an enhanced staff development program. As a result of the district's plan, its paradigm of learning was changed from "learning for some" to "learning for all."

At the elementary level, one of the schools has used video and computer technology to implement a school-wide communications theme. Student-created, technology-related products, telecommunication activities, and technology-based assessments are the basis of the academic program.

In the fall of 1988, "Exploring Technology" at Pauling Middle School became a model technology course for the state of California. The class offers students 15 modules, each based upon an eight-day format. At another of the district's middle schools, three components of its technology department — Life Management, Exploring Technology and Computer Science — are offered as nine-week exploratory classes in the 7th grade and as a semester class for 8th graders.

At the high school level the district has a university-approved freshman science course taught by a team of academic and technical teachers. The course curriculum and its assessment were written by staff from the high school, junior college, and local four year university as well as eleven corporations.

Purchased integrated curriculum materials, such as applied academic materials from the Center for Occupational Research and Development (C.O.R.D.), serve as the basis of an integrated science class. In addition, at the high school, the special needs population is included in the high schools integrated programs. A special 9th grade career exploration program was established for students with special needs.

In addition, the district designed several partnership academies with corporate partners. At Arroyo Grande High School, the Business Education School of Technology (BEST) was able to develop a partnership "wealth academy" which features integrated academic courses, a tech-prep program with Allan Hancock Community College, and four career programs. The academy's partners include California

Continued

Lucia Mar Unified School District

Continued

Polytechnic State University and Safeway.

Based upon a partnership with Ventura Junior College and the Toyota Corporation another academy was designed. The district renovated the auto shop and Toyota, in turn, trained the school's staff and designed an evaluation process. Students complete the program then continue their studies at Ventura Junior College.

In the district "daVinci Connections" is the third fully integrated school-within-a-school at the high school level. Through "daVinci Connections", English, history, art, and technology serve as core academic courses for the high school's industrial technology students.

Lucia Mar continues to strengthen its existing academies and ensures that students throughout the system achieve the performance standards it established. Based upon an affiliation with the Endeavor Center and NASA, the district plans to "launch" an Astronautics Academy in the 1995-96 school year.

As a result of its integration efforts, Lucia Mar's drop-out rate has continued to decrease. In six years, instead of 20% continuing with higher education or technical schools, 81% of the district's graduates now continue their studies.

Fiscal Notes:

The district has used Carl D. Perkins funds to help its teachers from various disciplines begin developing an integrated academic and vocational curriculum. It also has used funds to hire technical people from outside the school district (e.g. a NASA staff person) to assist with their academies.

Corporate partnerships have also resulted in additional substantial funds and expertise being provided to the school district.

Lessons Learned:

1. It is critical to involve employers by informing them that the district wants to do a better job preparing its students to be productive employees.
2. It is important to ask employers what they think productive employees are able to do.
3. A flexible school schedule is necessary to coordinate efforts with local colleges.
4. Partners both on the education and the industry side do not have to be located nearby.

Pasadena Unified School District

State: California
Contact Person: Alma Dillard, *Coordinator*
Partnership Academies/Mentorship Program
Pasadena Unified School District
351 South Hudson Avenue
Pasadena, CA 91109
(818)568-4549

District Description:

Pasadena Unified School District has an enrollment of more than 20,000 students served in 33 schools, including four high schools. Since the 1960's its enrollment has drastically declined and its demographics have changed from a majority Caucasian district to an enrollment of about 39% Hispanics, 37% African Americans, 19% Caucasian, and 5% Asian. Nearly 25% are limited-English proficient. About 40% of the district's students participate in the federally funded "free or reduced" lunch program. Almost 20% of its students are from a family receiving Aid to Families with Dependent Children (AFDC).

Integration Features:

- involvement of business community;
- partnership academies;
- mentorships/internships;
- career clusters.

Integration Narrative:

In 1988, the district began a broad high school reform effort which included an attempt to revitalize vocational education. The local business community was involved in the school district's efforts "to create world-class high school graduates who would be able to contribute significantly to the workforce with or without college."

The business community helped to develop curriculum for each academy and completely furnished the academy classrooms. Funding from the business community provided the original support for the district's efforts.

A Health Careers Academy and a High Tech Academy were begun in 1990. The following year, a Computer Careers Academy, Finance Academy, Space Academy, and Graphic Arts Academy opened. In 1992, a Visual Arts and Design Academy was formed. Three more academies are being planned in the fields of public service, environmental studies, and teaching.

Every high school in the district has at least one partnership academy. Mentorships and internships are an important part of an academy student's curriculum.

Middle school pre-academies were initiated, but disbanded the following year due to lack of funds. Elementary school skill building reinforcement efforts continued with the Saturday/Summer Enrichment, and the Saturday Science Academy for grades 4-8. The district will seek additional funding for re-instituting the elementary and middle grade level pre-partnership academy efforts.

As part of Pasadena's current efforts to expand integration, one of the high schools will begin a "career cluster" program for all ninth graders to prepare them for one of the academies.

Fiscal Notes:

Financial support for Pasadena's integration efforts have been outlined on the chart on the following page.

Lessons Learned:

1. The added support of the board's presence at academy functions assists in maintaining and nurturing institutional support for integration.
2. It is critical that integration be viewed as a permanent change as opposed to a temporary program.

Continued

Pasadena Unified School District

Continued

Pasadena's Fiscal Sources

Source	Amount	Use
Federal Vocational Educational District Funds	$200,000/yr.	Staff development, release period for academy teachers, district coordination
State Career Guidance for 10th Graders	$60,000/yr.	Pre-academy portfolios, career counseling
State JTPA 8% Funds	$50,000/yr.	Mentor support, district coordination
State Partnership Academies	$120,000-$180,000/yr.	Two Academies, equipment, class size reduction, etc.
Los Angeles Co. ROP	Approx. $200,000/yr.	Pays much of the cost of Academy technical classes
Corporate Contributions	$80,000/yr.	Staff development, equipment
Jobs For Future	$20,000	Pilot youth apprenticeship
Private Sector	$500,000+	Equipment, time of employees
Comprehensive Math Science Project/Columbia University	$25,000	Math tutoring and instruction for all new academy students, summers

Pine Bluff School District

State: Arkansas
Contact Person: Linda Kittler
Tech-prep Coordinator
Pine Bluff School District
1215 West Pullen
Pine Bluff, AR 71611
(501)534-4275

District Description:

Pine Bluff School District serves 7000+ K-12 students in an urban community. It is the seventh largest district in Arkansas in terms of the number of students it serves. The district has 13 elementary schools, 2 junior high schools and 1 high school.

Most or 78% of Pine Bluff School District's students are African-American. The remaining 21% are Caucasian. Aid to Families with Dependent Children is received by 35% of the students; 59% of the students receive a free or reduced lunch.

Integration Features:

- "High Schools That Work;"
- Advanced Integration Models;
- common planning time;
- common students;
- staff development;
- block scheduling;
- applied academics curriculum;
- action based projects;
- student portfolios;
- business linkages;
- tech-prep.

Integration Narrative:

In Arkansas, upon graduation from high school, a student can receive a college prep and/or tech-prep seal with a minimum 2.75 GPA. Upon completion of the tech-prep core, students are prepared to enter a vocational or technical program, a college preparatory program, or a combination of the two.

Pine Bluff School District officially began its integration efforts in 1993-94 with the planning/development of the "High Schools That Work" workshop and the state developed guidelines. The high school, through its tech-prep program, supports three career paths or occupational clusters. The district provided staff development time and preparation time to help initiate the integration of academic and vocational integration.

Applied academic courses have been built into the curriculum. The use of action based projects and student portfolios have also been fundamental to the district's integration efforts.

In January 1994 Pine Bluff High School began serving as Arkansas' model site for becoming an Advanced Model for Integrating Vocational and Academic Studies. The career field which Pine Bluff High School is focusing its integration model to be built around is home economics.

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Pine Bluff School District

Continued

In 1994, the district developed a brochure to involve the community more in tech-prep. A survey of 100 businesses was also distributed to find out what courses and career paths should be added to the high school curriculum to meet the community's and the state's needs.

During the summer 1995, the Pine Bluff School District united the strengths of the schools, the Chamber of Commerce and the business and industrial community. *Vital Link*, a summer student internship that placed sixth graders into the workplace for a five-day period, was initiated. Students spent five half-days actually working shoulder-to-shoulder with an employee, instead of just job shadowing. The students were supervised by a certified teacher while in the workplace.

The high school is planning to go to a block schedule in 1995-1996 to maximize the benefits from its integration efforts. The year before was spent preparing the staff for the change. An activity period is being included which will be used for teachers to serve as advisors to students.

Also in 1995, the district is replacing some of its traditional vocational courses with an exploratory lab at the junior high and a SmartLab by Technology Lab 2000 at the high school. SmartLab is a comprehensive laboratory for the study of science and technology. It represents a total, integrated system of furnishings, equipment, computer-mediated instruction, software, and in-service training.

To assist students in meeting the higher academic standards resulting from integration, an extended school day, Saturday, and summer classes were instituted at the high school. In addition, a more structured study hall was formed. Peer tutors and mentors from the nearby university and the community are also utilized.

The district is establishing work-based opportunities for students through co-op, job shadowing, simulated work experiences, or a youth apprenticeship program.

In addition, the district is intending for its 8th graders to develop four year Career Education Plans. Individual conferences with parents, counselors, and teachers for 8th graders will be held to assist students. Career Day activities at both the junior and senior high campuses, reinforced by classroom activities, will be implemented. The district is also intending to coordinate its junior and senior high curriculum through guidance and curriculum planning.

Fiscal Notes:

The district supported its integration efforts through the receipt and utilization of $140,000 from federal Carl D. Perkins funds. The district also anticipates receiving $15,000 per year for two years to develop Pine Bluff High School as an Advanced Integration Model for Integrating Vocational and Academic Studies.

Lessons Learned:

1. It is important to phase in the integration efforts.
2. Integration has required faculty to become familiar with the content of courses in their discipline and also the course content across the entire curriculum.
3. Academic and vocational teachers can learn methods and techniques from each other in order to reach all students.
4. By working together, teachers can make subjects more relative to real life and therefore learning more meaningful to the students.

Reynolds School District

State: Oregon
Contact Person: Ed Smith, *Principal*
Reynolds High School
1698 Southwest Cherry Park Road
Troutdale, Oregon 97060
(503)667-3186

District Description:

Reynolds School District represents a suburban community which serves 7,000 students in grades K-12. The district's socioeconomic level is predominantly Caucasian and middle class; thirty percent of the district's students are considered college bound.

Integration Features:

- tech-prep;
- Project Vanguard;
- team teaching;
- K-12 focus;
- block scheduling;
- eliminated tracking;
- portfolios;
- Certificates of Initial and Advanced Mastery;
- staff development.

Integration Narrative:

Reynolds School District began its integration efforts almost three years ago. They had been working on tech-prep and had been trying to find ways students can learn more and develop other cooperative efforts with their local community college.

The school district linked with Project Vanguard and received training on how to plan, implement, and operate programs integrating vocational education and academic curriculum. (Project Vanguard, based at Sonoma State, California, is another national demonstration project on integration which focuses on staff development.)

Reynolds School District began at the high school level with the integration of Arts and Communication and also Industrial and Engineering systems. The academic areas targeted were English, science, and math. The vocational programs targeted were automotive technology and graphics. The first step was to team the teachers representing those departments to develop an integrated curriculum.

A district-wide team was created to connect the high school efforts with the district. The district realized that if students arrived in high school prepared as they currently were, the district's efforts to integrate vocational education and academic curriculum would not succeed. Students in kindergarten and higher have to be trained in active learning.

To determine whether the district is achieving its vision, curriculum concepts will serve as benchmarks for the 3rd, 5th, and 8th grades. Alternative learning centers are being developed for students who are not learning. The elementary school teachers are encouraged to integrate their subjects and have learning be more active and project-oriented.

In part to achieve integration, all middle school teachers have been placed on teams. In addition, students are connected with the teams. Active learning experiences continue to be developed within the middle schools. The class period was extended to 86 minutes resulting in an alternate day schedule and block classes for the teams.

Currently, the curriculum is being rewritten in all academic disciplines of Reynolds High School. In addition the school is piloting the integrated curriculum. Ninth and tenth graders further benefit as they share common core teachers in English, integrated science, social studies, wellness, careers and technology.

Reynolds School District decided to totally revamp their math program which is currently tracked. They are "untracking" the middle school math programs and the high school program will soon follow. The intention is to develop a Math 1, 2, 3, 4 program so that every year students will still be doing all kinds of math and will be shown the connection professionally.

Also, instead of having biology or physics, students will have a two-year requirement for integrated science. This science could be based upon a technical area.

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Reynolds School District

Continued

Similarly, the district is developing a four-year humanities program and training English teachers regarding communication.

In addition, the school and the school district is using the portfolio method of evaluating students learning under an integrated curriculum.

In June 1997 the first Certificates of Initial Mastery are expected to be awarded. Two years later, the Certificates of Advanced Mastery are expected to be presented. The Certificate of Initial Mastery will be based upon completion of the following curriculum:

- integrated humanities;
- integrated science;
- integrated math;
- foreign language;
- technology;
- wellness;
- futures (personal mastery, mental models, careers, and systems thinking) — *this area would prepare students to select a system study area for the Certificate of Advanced Mastery.*

The Certificate of Advanced Mastery will be based upon the following six strands:

- arts and communication;
- business and management;
- health services;
- human resources;
- industrial and engineering systems;
- natural resources.

The district has yet to determine the specifics of the final curriculum. They anticipate that there probably will be the following related focuses:

a. learning experiences with teams of teachers;
b. content attached with experiences;
c. authentic active learning experience sites to reinforce class-learning. This may include work experience, job shadowing, mentoring, site visits, speaker presentations, and apprenticeships;
d. performance assessments;
e. shared students and shared credits, e.g. the industrial teacher may be able to give some math credit for work performed.

Fiscal Notes:

The major expenses for the district's efforts to promote and achieve integration has been that of staff development and curriculum development. District funds have been used to pay for these efforts, along with matching grant funds from other sources. For example, two years ago the Reynolds School District received a $120,000 grant from the Oregon Department of Education for its student performance project. The high school received a $90,000 grant for curriculum writing, and the middle schools and elementary schools were awarded $60,000.

The integration funds have paid for 8 full days of teacher in-service for curriculum development and writing. It also provided for 6 part-days (late arrival/early dismissal) which were used for curriculum discussions. In addition, funds were used to cover the costs of substitutes to enable the integration team to write the curriculum and create the training. Finally, funds have been expended to educate the school board and the district management staff on issues relating to integration.

Lessons Learned:

1. It is essential that the board have a long-term integration vision and focus.
2. It is critical for the board to be updated on a regular basis.
3. The entire district needed to conceive of schools in different ways based on learning research and future work systems.
4. The entire district had to realize that experiences are necessary for learning. The acquisition of knowledge can not stand alone.
5. Constant communication with all players regarding the district's integration efforts has to be maintained.

Rochester City School District

State: New York
Contact Person: Dorothy Pecoraro, *Director*
School-to-Work Transition
Rochester City School District
131 West Broad Street
Rochester, New York 14614
(716)262-8389

District Description:

Rochester City Schools District serves approximately 35,000 students in 8 high schools, 7 junior high schools and 38 elementary schools. Almost 60% of the students are African American, 20% are Caucasian, and 16% are Hispanic. More than 70% of the students in Rochester City Schools District live in poverty.

Integration Features:

- applied learning competencies;
- K-12 focus;
- career awareness;
- apprenticeships;
- partnerships with business, local government, and higher education;
- partnership academy;
- tech-prep;
- staff development.

Integration Narrative:

Rochester City School District's integration efforts unofficially began in 1989 with the establishment of a bioscience and health careers academy. Its integration efforts were incorporated under its school-to-work plans. The Rochester Board of Education adopted a School-to-Work Transition Task Force model in 1991, paving the way for employers, teachers and students to work together to prepare students for the world of work. The hiring of a full-time director of school-to-work transition was also approved. This person became responsible for helping the district implement a comprehensive K-14 school-to-work transition plan which included the following six elements:

1. curriculum linking school and work;
2. support systems;
3. career awareness;
4. structured work based experience;
5. choice of educational direction by 10th grade (e.g., pursuit of an apprenticeship or preparation for college);
6. professional/technical preparation for 11th and 12th graders.

In 1992, the Rochester Business Education Alliance (RBEA) was formed to promote high standards, motivate students to achieve, and create options for non-college bound youth. In addition to small and large industries, RBEA includes the Rochester City School District, the National Center on Education and the Economy, county and city government, and nearby colleges and universities. RBEA in its first year formed a Standards/Leaving Outcomes Team to examine the relationship between what was being taught in the classroom and what skills are required in the workplace and to develop applied learning competencies. The Team proposed that the Rochester City School District curriculum be updated to reflect these competencies, which were adopted by the school board in March 1993.

In 1993, the Applied Learning Standards developed by RBEA were integrated into the curriculum. Staff development was provided to encourage teachers to incorporate the applied learning standards into their classrooms. The district is using Junior Achievement

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Rochester City School District

Continued

curriculum in elementary and middle school grades to begin teaching applied learning skills.

Rochester's first youth apprenticeship program began in July, 1993 in the skilled trades industry. The second health care youth apprenticeship program started in August 1994 and the third manufacturing youth apprenticeship began in August 1995. Rochester City School District's teachers are tying classroom instruction to the youth apprenticeship experiences.

RBEA plans on developing a supplementary certificate to the high school diploma that certifies what students know and are able to do. Another of RBEA's goals for 1995 is to have employers and post-secondary institutions provide priority hiring and admissions for students achieving established high standards. Local businesses, including Bausch and Lomb, Eastman Kodak and the Sentry Group, have begun to change their hiring criteria as they recognized that employees with these competencies were critical to achieving a high performance workplace. By 1996, all members of RBEA will have aligned their hiring and college admissions criteria to these higher standards.

Integration is further evident through Rochester City School District's magnet schools and partnership academies in its three comprehensive high schools. In the elementary grades, integration is exemplified through the use of portfolios as part of the student assessment. The district hopes that portfolios will soon be used by all grade levels so that students will have evidence of their integrated curriculum. In addition, the impact of integration is maximized through the district's articulated career guidance program. And in 1993-1994 students began to benefit from the district's piloting of tech-prep programs in the allied health and financial services industry.

Fiscal Notes:

The program budget is $1.3 million, funded through grants. District staff hopes and anticipates that with the board's support, tax-based resources may be allocated to expand the district's successful efforts.

Lessons Learned:

1. As the integrated academic and work-based curriculum expands and succeeds, more community businesses and members want to become involved.
2. Funding and resources must be allocated on a multi-year basis to sustain the successes achieved through integration.

Rothsay Public Schools District

State: Minnesota
Contact Person: Gary Zirbes, *Superintendent*
Rothsay Public Schools District
Box 247, 123 2nd Street, N.W.
Rothsay, Minnesota 56579
(218)867-2117

District Description:

A K-12 school district in the rural community of Rothsay, Minnesota. Rothsay Public Schools District serves 270 students. It is a "one-school" school district and functions as the hub of a community that has to fight statewide efforts to consolidate small schools.

Rothsay's average daily attendance rate is 96% and the graduation rate is 100%. Rothsay students have tested in the top 5% of the state. The majority of students go on to post-secondary education and graduate from college. The faculty-to-student ratio is 1 to 14. Less than 40% of its students receive a free or reduced lunch, and only 6% receive Aid to Families of Dependent Children (AFDC).

Integration Features:

- school-based enterprises;
- technology-based;
- personal learning plans;
- mentorships;
- work-based enterprises.

Integration Narrative:

In 1987, the community of Rothsay was dying. Its population was on a decline. Its lumberyard, gas station, health clinic, and beauty salon closed. No longer did Rothsay have an electrician or a plumber. In response to this population decline, the school district faced closure from the state.

In 1988, the Rothsay School Board decided to purchase the lumber/hardware store in an effort to connect its curriculum with real work experience and simultaneously offer an important service to the community.

In 1991, as a result of the successful lumberyard learning experience, a student-owned corporation — Teenage Innovative Group Entrepreneurs of Rothsay (TIGER) was formed as a non-profit corporation. Instead of buying shares, Rothsay students in grades 7 through 12 pay $5.00 member fees to become part of the corporation. TIGER purchased and operated a local grocery store.

The school district then purchased a motel to educate and house foreign exchange students. The building was remodeled using student labor and materials from the student-owned hardware store. A portion of the motel also serves as part of the school district's classroom space.

By 1992, the motel became the site of the Rothsay Learning Institute. Students enrolled from neighboring districts, including Native American students and students from South America, Europe and the Far East, all seeking entrepreneurial skills. In 1993, the Rothsay Learning Institute's classroom space was available for math, humanities, science, a technology center, and an interactive television studio that broadcasts and receives educational programs through a fiber optic network tied to twelve area school districts, the nearby state university and community college. Virtually every elective class is available as well as post-secondary classes via computer.

In 1993, with the help of experts from Designs for Learning, the Rothsay Community Learning Center was established. Half of Rothsay's students received parental support to participate. Each student created a Personal Learning Plan (PLP) for his/her educational program. Education efforts included students applying English skills by writing articles for local newspapers and magazines; designing advertising displays for local

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Rothsay Public Schools District

Continued

businesses, engaging in commercial accounting, and figuring fertilizer and chemical application rates for local farmers. Rothsay has developed a variety of Personal Learning Plans for approximately 40 students which include, but are not limited to, the placement of students in one-to-two-hour mentorships in area businesses and government agencies.

Through a joint powers agreement between the school district, the City of Rothsay, and Habitat for Humanity, students from both Rothsay and neighboring Barnesville School District are constructing a three-bedroom house from its foundation. Students are supervised by a certified carpenter, electrician, plumber, and volunteers.

In the future, Rothsay School District plans to continue the Personal Learning Plans and seek out more ways to extend the classroom into the world. This will include reinvesting the profits, constructing another house next year, creating a fitness club, and establishing joint ventures with several nearby American Indian tribes.

Fiscal Notes:

Rothsay has been successful in receiving grants and cash awards in excess of $ 350,000. Supervision of mentorships has been at no cost to the district. Teacher time is classroom time and is covered by the salary schedule.

Teacher salary and additional financial resources for students became an issue for the school district and its school board as a result of the involvement with the New American Schools Development Corporation (NASDC.) No additional funds were allocated and teacher salary was not impacted. However, district funds for 1994-1995 were subsequently reduced.

The school district actually saved between $ 100,000 - $ 300,000 of its funds by utilizing its school-based enterprises and providing its students with real-life learning experiences. In spite of the savings, the school district still has to attract grant funds and open enrollees from neighboring districts to avoid a budget deficit in 1995.

Lessons Learned:

1. Change is extremely difficult unless there is a unified effort among the school board, administration, and the community.
2. Personal Learning Plans are not for every student.
3. Students must still be required to take core classes (i.e., English, math, social science).
4. Students should be allowed three hours maximum of Personal Learning Plans daily. These plans should require application of as many classroom disciplines as possible in the school to work transition: computer, communications, math/accounting applications, problem solving, analytical thinking, etc.
5. Students should demonstrate skills acquired as a result of the curriculum — not just be able to converse about it.
6. A real business is much more effective for student learning than a simulation. School-based enterprises should not compete with existing businesses, but instead provide a community service and focus on student academic growth and experiences as opposed to profit motivation.

San Juan Unified School District

State: California
Contact Person: Merle Padilla, *Director*
Vocational and Applied Technology Education
San Juan Unified School District
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(916)971-7160

District Description:

San Juan Unified School District is the ninth largest elementary through adult school district in California with 52 elementary schools, 10 middle schools, and 9 high schools. The district has an enrollment of: 54,000 students of which 18% are minorities and 16% are students from households receiving Aid to Families with Dependent Children (AFDC). Slightly more than 10% of students receive a free or reduced lunch.

Integration Features:

- partnership academies;
- tech-prep;
- career pathways;
- linkages with higher education, industry;
- block scheduling;
- mentorships, job shadowing, internships, apprenticeships;
- staff development;
- facility modification;
- career assessment.

Integration Narrative:

Previously, San Juan's classes were isolated 50-minute periods, with little transition from school-to-work and little integration of academic and vocation education. As a result of national and state directives to restructure schools such as the Secretary's Commission on Achieving Necessary Skills (SCANS) and Second to None: A Vision of the New California High School, and in response to forces such as changing demographics, new workplace demands, advances in knowledge of how people learn, and fiscal pressures, the district developed a strategic action plan for creating systemic educational change in the school district. Referred to as San Juan 2000, the process involved all the education stakeholders including parents, students, teachers, administrators, community members, business/industry and government.

San Juan 2000 developed a new vision and mission for the school district which was adopted by the school board, along with learner outcomes. At the high schools, tech-prep, partnership academies, and/or career paths were instituted. At one of the high schools, every student benefits from an integrated curriculum through their enrollment in a partnership academy.

Some of the high schools have adopted flexible or block scheduling to support their integration efforts. It is hoped that in the future all the high schools in the district will have flexible scheduling. Furthermore each school will have one or more career foci and each student will have a career plan.

The district also established a school-to-career advisory committee which assists in its integration efforts. Specifically, the committee has sought employers to offer opportunities for employment and student training via mentors, job shadowing, internships and

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San Juan Unified School District

Continued

apprenticeships. The school-to-career advisory committee in addition helps school site teams with curriculum review and development and aids in the development of instruments to assess students' successful completion of industry standards.

The board also had to approve the allocation of resources to encourage the integration of academic and vocational learning. The district hired a Health Academy and Tech-prep Coordinator, Applied Technology Resource Teacher, Curriculum Facilitator, and Community Worksite Coordinator. In addition, stipend for staff, professional development opportunities, and/or substitutes were provided to support the integrated curriculum design. The board approved equipment repair and facility modification to support the academies as needed. Funding for a Career Assessment Pilot for the middle and high school level was also approved.

Fiscal Notes:

The San Juan School District has used a variety of resources to support its integration efforts. For example, its partnership with the local community college developed its Principals of Technology Lab. Federal Carl D. Perkins funds provided staff development. The district's general funds supported the Applied Technology Resource teacher. State funds which supported integration efforts included gender equity grants, tech-prep, school restructuring, mentor teacher, and staff development. Its partnership with industry provided a cost-savings through the donation of equipment, but more importantly, the expertise which was shared. The district also receives funds from of a private foundation for its partnership academy efforts. In addition, the support of community and service organizations is utilized.

The district continues to seek grants and other sources of revenue to continue the transition efforts and to provide for the future.

Lessons Learned:

1. It is critical to provide top-down support for bottom-up restructuring.
2. Continuing staff development is essential for achieving integration and dealing with misperceptions of staff.
3. Flexible site scheduling is a must to benefit from integration.
4. An important early step is to review the current utilization of district resources.

School District of LaCrosse

State: Wisconsin
Contact Person: Jacques Durnford, *Assistant Principal/Project Director*
Longfellow Middle School
School District of LaCrosse
19th & Denton
Lacrosse, Wisconsin 54601
(608)789-7670

District Description:

The school district of LaCrosse serves 7,800 students with 11 elementary, 3 middle and 2 high schools. Approximately 1,000 to 1,200 of the students are Hmong immigrants. AFDC is received by 35% of the students; 40% of the students receive a free or reduced lunch.

Integration Features:

- team teaching;
- block scheduling;
- community and business partnerships;
- career awareness.

Integration Narrative:

In 1992 the School District of LaCrosse began its integration efforts in one of its middle schools. Two classes of 7th graders participate in an actual study of the Mississippi River ecosystem. The study of the Mississippi River is used to apply mathematics, science, language-arts and social studies instruction.

Referred to as the "School on the River" program, LaCrosse's integration efforts developed as an idea by a school administrator. It was first implemented as a team taught summer school class which soon was incorporated into the regular curriculum. Four premises guide the "School on the River" Program:

1. the river is a better learning environment than the traditional classroom;
2. students learn better by doing;
3. coursework should have practical applications;
4. school subjects are interrelated.

After applying at the end of their 6th grade year, students are chosen by lottery to participate in the "School on the River" program. Half the students are male, half are female. The program coordinators set aside slots for learning-disabled students as well as those in accelerated math courses. Students divide their time between the classroom and nearly four dozen field activities over the year. The majority of their day for the "School on the River" operates as a block schedule.

The Department of Natural Resources was critical in planning, scheduling and devising a method to incorporate the four core curriculum concepts of science, math, social studies and language arts into a learning experience which would apply those concepts in actual experiences on the Mississippi River. Parental,

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School District of LaCrosse

Continued

community and environmental agency support has been phenomenal. In addition to being exposed to a challenging curriculum and living classroom, students benefit from the exposure to the different careers which revolve around a river.

As a result of "School on the River," other integrated efforts have been initiated in the school district. A mathematics teacher has begun an ad hoc "School in the Woods," in which students apply algebraic concepts to calculate work needs, production costs and financial gains through lumber/timber-related sales. Students learn how to purchase land which can be self-supporting. Teachers from disciplines such as physical education, music and shop are finding ways to apply academic learning to real world experience through building nets and canoes, or relating the real world experience through music, art and Shakespeare. District schools are moving toward block scheduling and considering magnet approaches.

Fiscal Notes:

The actual operating costs for "School on the River" is approximately $ 3,000. The costs have been folded into the ongoing operating district budget. The largest expenses are transportation and hiring substitute teachers to take classes while regular instructors are out in the field.

Three grants were obtained by the district and provided the initial support for the program:

- $12,000 converted a school bus into a mobile science lab which can accommodate 27 students and contains 4 computers, microscopes, running water and an electric generator;
- $750 purchased a sufficient supply of special life jackets for all participating students;
- a third grant from a canoe manufacturer allowed for the purchase of 12 canoes outfitted with trailers, life jackets and other necessities for class field trips.

Businesses, government officials and citizens have offered both expertise and financial support. In-kind donations have included cellular phones, walkie-talkies, and food.

Lessons Learned:

1. The success of the initial integrated effort encourages other integrated efforts.
2. One of the results of integration is that parents develop a new interest in their children's schooling.
3. It is important to institutionalize a district's integrated efforts.

Seattle Public Schools District

State: Washington
Contact Person: Malver Haynes, *Manager*
Technical-Professional Education
National Demonstration Site
Seattle Public Schools District
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(206)298-7965

District Description:

Seattle Public Schools District has an enrollment of almost 45,000 K-12 students. It has an ethnically diverse composition of 3.2% Native American, 23.2% Asian, 23.5% African-American, 43.3% Caucasian, and 6.7% Hispanic. The diverse student body speaks more than 77 different languages and dialects. The school district has at least ten high schools.

Integration Features:

- tech-prep;
- articulation agreements;
- career pathways;
- applied academics;
- career guidance;
- business linkages;
- student and teacher internships.

Integration Narrative:

Seattle Public Schools District began their integration efforts with the initiation of Seattle Tech-Prep. Working with Seattle Community College District, Seattle Public Schools began planning for tech-prep in 1989.

Articulation agreements between the Seattle Public Schools District and the Seattle Community College District serve as the foundation and major selling point for Seattle Tech-Prep. The articulation agreements are based upon program areas where faculty have defined competencies and expectations. As a result of the agreements, Seattle Public Schools students who demonstrate successful performance in designated integrated courses do not have to repeat the same coursework in community college.

Seattle Public Schools District and the Seattle Community College District spent two years building career pathways for applied academic offerings beginning from the high school years and continuing through receipt of an associate degree. Prior to this, applied academics courses were incorporated into the high schools.

Seattle Public Schools District employs a Tech-Prep Counselor. Individual student plans are developed to enable students to design their four or six year education and training plan. Students are expected to update and revise their plans as deemed necessary.

To coordinate the tech-prep program, both Seattle Public Schools District and Seattle Community College District hired full-time tech-prep Coordinators. In addition, a tech-prep Steering Committee composed of representatives from both districts meet regularly to monitor Seattle Tech-Prep efforts.

Approximately 200 representatives of business, industry and labor organizations sit on Seattle Public Schools advisory committees to help review its integrated curriculum and to monitor tech-prep activities.

Seattle Tech-Prep has the support of the school board members, college trustees, administrators, faculty and taxpayers. The local four-year universities are beginning to link their efforts with Seattle Tech-Prep.

Fiscal Notes:

The Boeing Company provided generous support (approximately $ 30,000) for applied academics implementation over a three-year period. Boeing also offers paid summer internships which emphasize manufacturing technology to both students and teachers.

Other grants received include $ 350,000 from the State of Washington over a 3-year period and a federal dissemination grant of $ 500,000 to cover a 3-year period. Additional state funds make up the difference between actual program costs and grant funding.

Each computer lab alone costs $ 30,000.

Lessons Learned:

1. School board leadership is essential in launching the vision for integration along with providing initial resources.
2. Bring in all players from the beginning planning stages through implementation.
3. Academic and career guidance is crucial. Counselors need to be directly involved in the planning and discussion phases as well as actively involved in the assessment and monitoring of student participants.
4. Parents need to be involved in all phases of integration.

St. Mary's County Public Schools District

State: Maryland
Contact Person: Stephen G. Olczak,
Principal/Supervisor Career and Technology Education
St. Mary's County Technical Center
St. Mary's County Public Schools District
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(301)475-5501

District Description:

About 60 miles southeast of Washington, D.C., St. Mary's County Public Schools system serves a rural area in southern Maryland. The school system addresses the educational needs of more than 13,000 K-12 students in 24 schools, including three high schools, four middle schools, and one technical center.

Approximately 82% of the district's students are Caucasian and the other 18% are African American. More than 25% of the students receive a free or reduced lunch.

Integration Features:

- "High Schools That Work;"
- tech-prep;
- K-higher education focus;
- career guidance;
- career clusters;
- course sequences;
- community college articulation;
- increased academic/vocational requirements;
- graduation requirement;
- portfolios.

Integration Narrative:

In 1988, St. Mary's County Public Schools started as an original Southern Regional Education Board (SREB) pilot site for the High Schools That Work (HSTW) program. In 1989, the Southern Maryland Educational Consortium was formed in response to the needs of local employers. Two other county school systems of Southern Maryland, along with the community college which served all three counties, met to address the integration of academic and vocational education through a tech-prep initiative. In 1990, St. Mary's County Public Schools system started its tech-prep program. The school district became a federally-funded U. S. Department of Education tech-prep model site from 1991-1994.

Beginning in elementary school, St. Mary's County students are encouraged to develop an awareness of work and possible careers. In middle school, students take a nine-week career development program. Students attend career fairs, are tested on interests and aptitudes, and engage in job shadowing and other career experiences. Middle school students are also required to develop student career folders in which they record their experiences in their career searches.

Before entering high school each student meets with a guidance counselor to select a four-year "career cluster" that focuses on occupational, technical or college preparatory skills. A sequenced four-year plan of study is then selected and placed in the student's career folder before it is sent to the student's new high school. The plan includes information regarding articulated courses offered by the community college and other post-secondary options. All students are required to develop a career folder and career plans.

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St. Mary's County Public Schools District

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At each of the high schools, students are taught academic courses such as mathematics and science in ways that combine hands-on technology, critical thinking skills and real-life applications. Academic and vocational requirements have been increased in each course. All students take an Applied Communications (CORD) course as part of the 9th-12th grade English curriculum.

As the students become seniors, the career folder becomes a career portfolio and contains evidence of career exploration, course work, and student products. Beginning with the class of 1995, the career portfolio is a graduation requirement for all students.

Student performance has improved dramatically as a result of the district's integration efforts. At one of the high schools, 61.4% of the graduating class met requirements for entry into a college or vocational-technical school, compared to 36.3% of the class of 1991. In four years, 50% more students were taking SAT and the math scores still climbed 50%. In the same period, the dropout rate fell from 8% to 3% and the percentage of students having GPAs above 3.0 increased from 20% to 28%. In summary, higher expectations of all students were met.

The school district plans to complete its efforts by moving to a school-to work educational system. Expanded work-based learning programs are in place. Approximately one-third of all seniors are engaged in worksite experiences directly related to their career area. Others are enrolled in post-secondary classes while still in high school. Currently twenty-one high school courses are articulated with the nearby community college permitting students to enter post-secondary programs with earned credit. Employer partnerships have been expanded in all phases of the district's school-to-work agenda.

As funds permit, the school district is increasing the use of technology in the schools. Specifically, it hopes to integrate existing and emerging technologies into the curriculum through technology laboratories in the ninth grade as a required course.

Fiscal Notes:

The program received a $500,000 federal tech-prep grant for the three-county Southern Maryland Educational Consortium (SMEC) and a $94,000 grant from the Carl D. Perkins Act for SMEC. The school district receives a portion of each grant.

Lessons Learned:

1. Integration is absolutely the correct approach to reforming secondary education.
2. Accomplishments are not made overnight, but each change fosters a new change, and the changes made grow exponentially.
3. Integration must include ALL students. ALL students must focus on career outcomes. ALL students must have a post-secondary education plan.
4. Integration is the key to getting ALL students engaged in the learning process. Integration allows for a variety of instructional strategies to reach the different student learning styles.
5. Career specialization requires an investment in increased technologies.
6. Keep the faith. Keep moving forward.

Tulsa Public Schools District

State: Oklahoma
Contact Person: Harold Helton
Vocational Coordinator for Special Programs
Tulsa Public Schools District
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Tulsa, OK 74147-0208
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District Description:

The Tulsa Public Schools District encompasses 164 square miles and serves 42,000 students in 54 elementary, 14 middle schools and 9 high schools.

Three counties are served by the school district with the majority of the students coming from Tulsa City. Slightly less than half of the students receive a free or reduced lunch.

Approximately 18 percent of 9th graders in Tulsa County do not graduate from high school. Approximately 38% of those who complete high school continue to attend a two or four year college.

Integration Features:

- apprenticeship;
- business partnerships;
- applied academics;
- higher ed articulation;
- mentors;
- staff development.

Integration Narratve:

The Tulsa Public School District's integration is accomplished through a special effort which has received national attention entitled, "Craftsmanship 2000." Developed by a manufacturing company, "Craftsmanship 2000" is a three-year metalworking youth apprenticeship program beginning in the 11th grade that leads to an associate degree from Tulsa Junior College. It is supported by the Tulsa Chamber of Commerce.

C2000 students take academic and technical courses at Tulsa Tech. During their first year, students take English, history, physics, applied math and an intensive introductory machining course. All academic classes except history incorporate applied components relevant to manufacturing. Second year courses are English, geometry, advanced machining, drafting, metal finishing, electronics, hydraulics and machine repair. Third year courses include welding. All students are required to have worksite experience in years 2, 3, and 4 of the program.

During their third year, students take courses at Tulsa Junior College and Tulsa Tech on computer numerical control machining, statistical process control, inventory control, metallurgy, general management, basic computer hardware and software, social studies, speech and writing. Tulsa Junior College extends credit toward the A.A. degree for worksite experience and Tulsa Tech work.

Students apply for the program during the 10th grade and are selected based on grades, scores on standardized achievement and skills tests, written statements and interviews. Students also are given a mentor that has been provided with 15 training sessions on methods for training and supervising high school students.

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Tulsa Public Schools District

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In the fall of 1993, C2000's first class of 11th-graders started at the Tulsa Technology Center (Tulsa Tech), a regional vocational high school. Employers paid the first group of students approximately $50,000 over four years for their school and work time — with bonuses for grades and attendance. To attract additional employers, subsequent stipends were cut by 40% and welding instruction was added. Students are employees of C2000, not the sponsoring firms. Employers are actively involved in developing and refining the curriculum.

Another integration effort for the district is the beginning of its partnership academy. In 1994, Tulsa Public Schools District began its health academy. Tulsa's private industry council sponsored an eight week enrichment program for the health academy's ninth and tenth graders. Offered at the local community college, students took special classes and explored career opportunities.

Fiscal Notes:

Tulsa Tech paid for the curriculum development specialist who worked for almost a year on C2000's course plans; the Chamber of Commerce paid for the early cost of the program coordinator. C2000 received $250,000 from the U.S. Department of Labor to pay for the program coordinator, curriculum development, tools and textbooks. A Tulsa public utility donated $20,000 and a staff person to train the students' supervisors. During the program's first year, Tulsa School District paid for the academic teachers; Tulsa Tech paid for the vocational teacher and guidance counselor. The employer sponsors pay students' stipends and contribute staff time for developing and refining the curriculum and supervising and training students.

Week-long workshops on integration have been provided for staff during the past three summers for four of the district's high schools. Each workshop costs $14,000-$17,000, which includes stipends for the teacher participants. The workshops were funded with Carl D. Perkins Funds. Last year business members were involved in the workshops. This summer middle school teachers received training on integration too.

This past summer, district funds were also used to provide a week-long training on integration involving all disciplines for middle and high school teachers.

Lessons Learned:

1. Schools that have made the most progress with integration have had the support of the building administrator.
2. Community involvement is essential to encourage buy-in.
3. Community involvement is a never-ending process.

Van Buren Intermediate School District

State: Michigan
Contact Person: Donald Olendorf
Executive Secretary
Educational Research and Development Foundation
Van Buren Intermediate School District
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Lawrence, MI 49064
(616)674-8001

District Description:

In western Michigan, Van Buren Intermediate School District serves as a regional school district providing career-technical education, migrant/bilingual education and special education for students, along with professional development for school staff. Fifteen school districts feed into Van Buren. It has one area vocational-technical center serving over 900 juniors and seniors and adults.

Van Buren Intermediate lies in a rural area and is the second poorest county in Michigan based upon the percentages of families living below the poverty level. The school district's minority population mirrors the nation's percentages.

Integration Features:

- portfolio-based;
- community buy-in;
- project-based;
- career guidance.

Program Narrative:

Beginning in 1991, the Van Buren Intermediate School District largely accomplished and demonstrated its integration of academic and vocational education through the use of portfolios. A task force consisting of local business, labor, and education leaders recommended the usage of portfolios after identifying three skill areas critical to future job success: academics, personal management, and teamwork.

Referred to as the "Student Managed Portfolio system," the students themselves collect and document proof of their academic and personal skills in their portfolios. Items in the portfolio can include tests, photographs of integrated projects, computer disks, and other documents that demonstrate activities both in and out of school, including a student's paid or unpaid work experience. Students have used their portfolios to apply to colleges and to secure jobs.

The student portfolios are continually incorporated into their academic program. Beginning in eighth or ninth grade, students begin career exploration and receive career guidance. Working with a counselor, students develop personal Employability Development Plans which are included in the portfolio. The student plans are reviewed and updated yearly.

Faculty is critical to the success of the student portfolios and staff development has been fundamental. In addition to actual training, a portfolio instructional guide and a video was created. Mentor teachers have been identified to encourage and assist other teachers in using the portfolios.

Fiscal Notes:

To facilitate the development of the portfolios and their usage, the school board supported the creation of the Van Buren Intermediate School District Educational Research and Development Foundation. The foundation has served as a consulting resource regarding the Student Managed Portfolios.

Van Buren Intermediate School District has worked with the Western Michigan University on the portfolios. Carl D. Perkins funds were used for the development and implementation of the portfolios.

Lessons Learned:

1. Specific attention is needed to address the needs of particular students, such as those receiving special education services or migrant children.

Part II

National Integration Demonstration Projects

U.S. Department of Education Office of Vocational and Adult Education (OVAE) Division of National Programs (DNP)

Program Title: Demonstration Projects for the Integration of Vocational and Academic Learning Program
Project Title: Integrating Academic and Vocational Learning: The Essential Policy-making Role of School Boards
Contact Person: Jean Dunn-Gallagher
California School Boards Association
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W. Sacramento, CA 95691
(916) 371-4691 FAX: (916) 371-3407

Program Narrative:

The objectives of "Integrating Academic and Vocational Learning: The Essential Policy-making Role of School Boards" are to provide school policy-makers with knowledge of the principles of integrated vocational and academic programs and effective implementation strategies; to develop curriculum for training the school governance team; to demonstrate the impact of board training on district policy, classroom curriculum, and student performance; to disseminate the governance training model within California and nationwide; to provide a comprehensive evaluation of the model; and to develop materials appropriate to school district policy-makers suitable for replication nationally.

Procedures for implementing the "Integrating Academic and Vocational Learning: The Essential Policy-making Role of School Boards" project include:

1. conducting a pre/post training survey;
2. developing governance team training curriculum;
3. providing state school boards associations with:
   a. a curriculum training outline;
   b. a curriculum training manual;
   c. a compendium of successfully integrated programs;
   d. an integration awareness building/training video;
4. publishing articles and delivering presentations at conferences;
5. conducting demonstration site activities;
6. conducting regional trainings in California and other training sessions in cooperation with CSBA'S board development program;
7. evaluating the impact of school board member training.

The goals of the project are to develop a curriculum training outline, a curriculum training manual, a compendium of successfully integrated programs, and an integration awareness building/training video for dissemination nationally. Other goals of the project include board member trainings, journal and newsletter articles, presentations at national conferences, pre/post training survey results, interim and final evaluation reports, and effective school board policy-making regarding integration.

Fiscal Notes:

"Integrating Academic and Vocational Learning: The Essential Policy-making Role of School Boards" is 100% federally funded and was awarded $228,239 for fiscal year 1994. The time period for this project is March 1, 1994 - February 28, 1998.

U.S. Department Of Education Office of Vocational and Adult Learning (OVAE) Division of National Programs (DNP)

Program Title: Demonstration Projects for the Integration of Vocational and Academic Learning Program
Project Title: A Model for Integration of Academic and Vocational Learning Utilizing Education, Business and Community Partnerships

Contact Person: Dr. Laurel Adler
East San Gabriel Valley Regional
Occupational Program
1024 West Workman Ave.
West Covina, CA 91790
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Program Narrative:

The objective of the Model for Integration of Academic and Vocational Learning Utilizing Education, Business and Community Partnerships is to increase the integration of academic and vocational learning at the classroom, school-site, work-site, and regional levels by developing and disseminating processes and products designed to help others plan, design, implement, and evaluate any or all of the following three types of integration:

1. academic and vocational integration of curriculum and instruction taught within and between academic andvocational courses, programs, and levels;
2. secondary and post-secondary education where course content is articulated to provide course sequencing;
3. school-to-work in which curricula outcomes match the needs of high skills, technological workplaces.

Also, the project plans to provide a comprehensive evaluation of a model program that allows replication by other institutions.

Procedures to implement "A Model for Integration of Academic and Vocational Learning Utilizing Education, Business and Community Partnerships" include:

1. developing curricula and curriculum development strategies that connect and merge academic and vocational subjects through discipline-bridging themes and projects;
2. developing a model which will have several key components such as clustered instruction activities, worksite apprenticeships, articulation of curriculum, support services, and guidance counseling;
3. producing and disseminating handbooks and guides regarding planning, curriculum content and sequencing, integrated activities, worksite apprenticeships, guidance and counseling, staff development, home and community based activities, and transition activities.

A major goal of the project is to demonstrate that the specific strategies utilized by the model have a significant positive effect on high-risk youth in terms of high school graduation, academic achievement, progress to post-secondary education and employment. Products and processes will be shared via professional development training, workshops, technical assistance and products including curriculum, instruction, worksite learning, guidance and staff development handbooks and guides.

Fiscal Notes:

A Model For Integration of Academic and Vocational Learning Utilizing Education, Business and Community Partnerships project is 61% federally funded and was awarded $457,377 from fiscal year 1993. Non-federal funds are $287,504. The total project allowance for the first year is $744,881. The time period for the project is January 1, 1994 - December 31, 1997.

U.S. Department of Education Office of Vocational and Adult Education (OVAE) Division of National Programs (DNP)

Program Title: Demonstration Projects for the Integration of Vocational and Academic Learning Program
Project Title: Integration of Vocational and Academic Learning/Demonstration Project

Contact Person: Robert L. Starke
El Paso Community College
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El Paso, Texas 79998
(915)757-5806 FAX: (915)594-2592

Program Narrative:

The objectives of the "Integration of Vocational and Academic Learning/Demonstration Project" are to contribute to the improvement of education by helping to better define the skills needed for employment. By defining these skills, the project will implement acceptable levels of proficiency, offer effective ways of assessing proficiency, and disseminate strategies that work for the nation's schools, businesses, and homes to successfully integrate vocational and academic learning.

Procedures for implementing the "Integration of Vocational and Academic Learning/Demonstration Project" include:

1. developing integrated instructional materials for targeted courses;
2. implementing innovative integrated instructional methodologies;
3. pilot testing integrated courses for one year;
4. pre- and post- assessments of student performance and success;
5. developing a database for tracking of experimental and control group samples;
6. providing in-service training and faculty development for instructors involved in integrated vocational/academic instruction;
7. disseminating information and materials on the successful integrated instruction used in the targeted courses.

The goals of this project are to produce the following outcomes: students will become more competent; students will persist longer in academic/vocational programs; students will acquire skills which will make them more employable; the attitudes of teachers towards integration will be positive; a summary of essential skills required for employment in each target career path will become available; the delivery of targeted vocational courses will change to integrate academic skills; and the innovative teaching methods and materials developed will be disseminated within the college, throughout the state and nation. A collection of integrated curriculum projects will be compiled with "before and after" examples in the final report. Integration class activities/assignments, lab projects, homework assignments, instructional aids, etc. will be developed and made available for replication. The data that is derived from this study will provide a basis for submitting an application to the Department of Education Program Effectiveness Panel.

Fiscal Notes:

The Integration of Vocational and Academic Learning/Demonstration Project is 100% federally funded and was awarded $259,050 for the fiscal year 1994. The period of the project is January 31, 1994 - January 30, 1998.

U.S. Department of Education Office of Vocational and Adult Education (OVAE) Division National Programs (DNP)

Program Title: Demonstration Projects for the Integration of Vocational and Academic Learning Program
Project Title: The Transportation Career Academies Program
Contact Person: Naomi Nightingale
The Los Angeles Co. Metropolitan Transportation Authority
818 W. 7th Street
Los Angeles, CA 90017
(818)244-6410 FAX: (818)244-6013

Program Narrative:

The objective of "The Transportation Career Academies Program" is to use integrated vocational and academic curriculum and best practices instruction to develop, with partner schools and community colleges, a four year (11-14) sequence of courses leading to technical degrees in transportation related fields which would prepare students for jobs and/or advanced study in engineering, architecture or urban planning. Also, the project plans to provide a comprehensive evaluation of a model program along with materials for dissemination and replication.

Procedures to implement "The Transportation Career Academies Program" include:

1. developing and implementing curriculum and instructional programs with vocational and professional experts from the transportation industry;
2. workshops with transportation industry experts structured to redefine the role of the teacher as guide and mentor and to assist in the development of activity-based instructional strategies;
3. involving industry professionals as resources to teachers and administrators in the design of curriculum and development of practical classroom products and assignments;
4. organizing a consortium of multi-modal representatives and transportation agencies who will be advisors to academic and vocational course development;
5. publishing brochures and journal articles;
6. identifying and describing "best practices;"
7. determining generalized outcomes for students, teachers, community colleges and employees.

The project seeks to produce an integrated curriculum, instructional strategies, teacher development training workshops, administrator/leadership development workshops, presentations in workshops and conferences, journal articles, successful teaching strategies and business-education partnership strategies for developing and supporting integrated education and school-to-work programs in the transportation industry.

Fiscal Notes:

"The Transportation Career Academies Program" is 100% federally funded and was awarded $350,000 for fiscal year 1994. The time period of the project February 14, 1994 - February 13, 1998.

U.S. Department of Education Office of Vocational and AdultEducation (OVAE) Division of National Programs (DNP)

Program Title: Demonstration Projects for the Integration of Vocational and Academic Learning Program
Project Title: Vocational Integration with Academies Project
Contact Person: Larry Rosenstock
Rindge School of Technical Arts
435 Broadway
Cambridge, Massachusetts 02138
(617)349-6753 FAX: (617)349-6770

Program Narrative:

The objective of the "Vocational Integration with Academies (VIA) Project" is to demonstrate how an urban comprehensive high school can remove artificial barriers between vocational and academic departments, combine the best practices of both, and thereby improve the quality of education for all students.

The VIA Project will create four new career pathways consisting of coherent sequences of courses in: Health and Human Services; Arts and Communications; Industrial Technologies and Engineering; and Business and Entrepreneurship. For each path, VIA will establish a multi-disciplinary design team comprised of a team leader and faculty members drawn from academic and vocational departments.

Each of the four design teams will produce a Best Practices manual that includes multi-disciplinary classroom projects, curricular modules, instructional and assessment strategies that reflect the best practices of academic and vocational education, and will design and conduct related workshops for other practitioners.

Fiscal Notes:

The Vocational Integration with Academies Project is 77% funded by the federal government and was awarded $343,406 for fiscal year 1994. Non-federal funds for the same year were $100,000. The total project allowance for fiscal year 1994 was $443,406. The time period for the project is March 1, 1994 - February 28, 1998.

U.S. Department of Education Office of Vocational and Adult Education (OVAE) Division of National Programs (DNP)

Program Title: Demonstration Projects for the Integration of Vocational and Academic Learning Program
Project Title: V.A.N.G.U.A.R.D. Project (Vocational and Academic Integration: Generating Unprecedented Achievement in a Restructuring Design)

Contact Person: Tony Apollon, Ph.D.
California Institute on Human Services
Sonoma State University Academic Foundation
1801 E. Cotati Avenue
Rohnert Park, CA 94928
(707)664-2416 FAX: (707)664-2417

Program Narrative:

The objective of the V.A.N.G.U.A.R.D. Project is to train teachers, administrators and counselors from 500 schools on vocational and academic integration and how to develop an integrated curriculum, to provide follow-up technical assistance to project participants and to disseminate the project through the distribution of replication materials via conference presentations, teleconference and journal articles.

Procedures to implement the V.A.N.G.U.A.R.D. Project include:

1. the identification/commitment of school leadership teams for training;
2. a two-day "Planning for Vocational and Academic Integration" workshop;
3. a three-day "Development of Integrated Curriculum" workshop;
4. follow-up technical assistance to school teams;
5. development and maintenance of the integrated Curriculum Bank;
6. project dissemination.

The project seeks to increase students' perception of the relevance and rigor of coursework by 50%; increase school personnel perceived relevance, rigor, student motivation, and coordinated teacher planning by a minimum of 70%; produce integrated curricula; increase student academic achievement by 10%; and show a 30% passage of SCANS (Secretary's Commission on Achieving Necessary Skills) competencies.

Fiscal Notes:

The V.A.N.G.U.A.R.D. Project is 100% federally funded and was awarded $457,056 for fiscal year 1994. The time period for this project is January 1, 1994 - December 31, 1997.

U.S. Department of Education Office of Vocational and Adult Education (ORAE) Division of National Programs (DNP)

Program Title: Demonstration Projects for the Integration of Vocational and Academic Learning Program
Project Title: Assisting Schools in the Southern Region to Develop Advanced Models of Integrating Academic and Vocational Education
Contact Person: Gene Bottoms
Southern Regional Education Board
592 Tenth St., NW.
Atlanta, GA 30318-5790
(404)875-9211 FAX: (404)872-1477

Program Narrative:

The objectives of "Assisting Schools in the Southern Region to Develop Advanced Models of Integrating Academic and Vocational Education" are to create advanced models of integrated academic and vocational curricula in regional high schools distinguished by high proportions of students from low socio-economic backgrounds and minority groups which are representative of the wide range of schools in the Southern Regional Education Board's "High Schools That Work" network; and to promote the adoption of basic and advanced models of academic and vocational integration at other schools in the network and throughout the nation.

Procedures to implement "Assisting Schools in the Southern Region to Develop Advanced Models of Integrating Academic and Vocational Education" include:

1. linking schools into a learning network with other schools and national experts;
2. working with school and system leaders to make systemic changes, enabling teams of teachers to design, implement, and refine interdisciplinary curricular and instructional strategies for students in career and technical studies;
3. providing technical assistance evaluation information, and examples of best practices.

The goals of this project are to increase the number of students completing high school who perform at proficiency level on national achievement tests in reading, mathematics, and science; complete an upgraded academic core; are rated satisfactory by teachers and employers; and successfully enter post-secondary education or employment. At least 500 high schools will work on basic and advanced integration, while another 1,000 will participate in dissemination and demonstration activities. Products include: advanced integration guidelines; curriculum materials; training videos; national satellite telecasts; workshops; outstanding practices publications; presentations at national conventions; and observation/training conferences.

Fiscal Notes:

"Assisting Schools in the Southern Region to Develop Advanced Models of Integrating Academic and Vocational Education" is 54% federally funded and was awarded $501,073 for fiscal year 1994. Non-federal funds for this same year were $433,749. The total project allowance for fiscal year 1994 was $934,822. The time period of this project is January 1, 1994 - December 31, 1997.

U.S. Department Of Education Office of Vocational and Adult Education (OVAE) Division of National Programs (DNP)

Program Title: Demonstration Projects for the Integration of Vocational and Academic Learning Program
Project Title: Navajo Nation Land Resources Education Project
Contact Person: Dr. Roger T. Huber
University of Arizona
Department of Agricultural Education
224 Forbes Building
Tucson, AZ 85721
(602)621-1523 FAX: (602)621-9889

Program Narrative:

The objective of the Navajo Nation Land Resources Education Project is to provide certified job skills for careers in agriculture and natural resources by: classroom integration of academic and vocational education; utilizing a Land Resource Center to conduct cognitive-apprenticeship projects; developing curricula tailored to local conditions and opportunities; and utilizing Native American professionals as cultural advisors and mentors. The project plans to provide a comprehensive evaluation of the model program and develop materials for demonstration, dissemination and replication state-wide, regionally and nationally for use by other institutions.

Procedures to implement the integration of academic and vocational education will be accomplished by curriculum teams of Native American professionals and academic and vocational educators. Project implementation utilizes "The Academy Model," "Accommodation Teams," "Cognitive-Apprenticeship," "Service-Learning" and appropriate technology sensitive to Navajo culture and local conditions. Project personnel will produce and disseminate curricula, conduct conferences and workshops, publish journal articles, and deliver presentations relating outcomes of the project to interested state, regional and national entities for replication.

The goals of the Project include: improved academic achievement and increased employment/career opportunities for participants; revised curriculum products that integrate academic, vocational and cultural components into the educational experience; process, implementation evaluation and facilitator manuals/guides; workshops for technical assistance and professional improvement; journal articles; and conference and professional organization presentations.

Fiscal Notes:

The Navajo Nation Land Resources Education Project is 86% federally funded and was awarded $127,523 for fiscal year 1994. Non-federal funds for the same year were $20,731. The total project allowance for fiscal year 1994 was $148,254. The time period for the project is January 1, 1994 - December 31, 1997.

U.S. Department of Education Office of Vocational and Adult Education (OVAE) Division of National Programs (DNP)

Program Title: Demonstration Projects for the Integration of Vocational Academic Learning Program
Project Title: The Pueblo Integrated Continuum Project

Contact Person: David Trujillo
University of Southern Colorado
District 60 Alliance
c/o District 60 Central Administration
315 W. 11th Street
Pueblo, CO 81003
(719)549-2969 FAX: (719)549-7114

Program Narrative:

The objectives of "The Pueblo Integrated Continuum Project" are to address the integration of academic and vocational learning in grades 8 - 16 and to increase system-wide expertise by: establishing a multi-institutional professional development program; inducing systemic change in the university teacher education program; using creative/innovative methods of integrating academic and vocational learning by incorporating elements from successful models; developing 8 - 16 curriculum and instruction strategies; and providing high quality educational services to at-risk, vocational students and adult learners.

Procedures to implement "The Pueblo Integrated Continuum Project" include:

1. developing curriculum aimed at the systemic integration of academic and vocational learning content, methods and strategies;
2. building level and department level practitioners teamed with private sector professionals to alter: teacher preparation curriculum; secondary school/community college curricula; pre-service and in-service professional development programs delivered by USC"s Center for Teaching and Learning aimed at developing local trainers needed for replication;
3. designing an alternative education "laboratory" setting driven by individualized and computer assisted instruction, tech-prep instruction and private sector internship experiences;
4. piloting/refining a proficiency-based assessment system based upon a Certificate of Initial Mastery;
5. developing internal and external evaluations that will drive the replication process.

The goals of this project are to produce professional development curricula, teacher preparation curricula, training manuals and videotapes, a process manual, journal articles, technical assistance and replication workshops.

Fiscal Notes:

The Pueblo Integrated Continuum Project is 86% federally funded and was awarded $368,140 for the fiscal year 1994. Non-federal funds for the same year are $58,009. The total project allowance for fiscal year 1994 was $426,149. The time period for this project is March 1, 1994 - February 28, 1998.

U.S. Department of Education Office of Vocational and Adult Education (OVAE) Division of National Programs (DNP)

Program Title: Demonstration Projects for the Integration of Vocational and Academic Learning Program
Project Title: Developing Integrated Vocational and Academic Learning Programs at the Secondary and Postsecondary Levels

Contact Person: Lloyd W. Tindall
University of Wisconsin-Madison
964 Educational Sciences Building
1025 West Johnson Street
Madison, WI 53706
(608)263-3115 FAX: (608)262-9197

Program Narrative:

The objectives of "Developing Integrated Vocational and Academic Learning Programs at the Secondary and Postsecondary Levels" are to provide leadership to secondary and post-secondary schools in the development of vocational and academic learning programs that serve students who are at risk, teen parents, of limited English proficiency, minorities, and students with disabilities, to disseminate the learning programs on a state and national basis and to increase student rates of graduation, employment and enrollment in higher education.

The project will work with two secondary and two post-secondary nine member vocational academic learning teams (VALP Teams) per year that are members of Wisconsin's Tech-prep Leadership Consortia to develop integrated learning programs. A four-week summer training workshop and technical assistance throughout the year will be provided to assist VALP teams in the development of integrated curricula to assist students in transitioning to work or post-secondary education and to assist post-secondary students in attaining an associate degree or certificate in specific occupational areas and subsequent employment in the areas of training or enrollment in higher education.

The goals of this project are to develop sixteen integrated programs over a four year period along with a manual describing the process and techniques effective in the development of these programs; to implement and evaluate the integrated programs; to produce sixteen video tapes-one for each development process; to host an annual distance learning conference and four national dissemination conferences; and to generate brochures and other materials describing the project's outcomes.

Fiscal Notes:

"Developing Integrated Vocational and Academic Learning Programs at the Secondary and Postsecondary Levels" is 100% federally funded and was awarded $387,141 for the fiscal year 1994. The period of the project is January 31, 1994 - January 30, 1998.

U.S. Department of Education Office of Vocational and Adult Education (OVAE) Division of National Programs (DNP)

Program Title: Demonstration Projects for the Integration of Vocational and Academic Learning Program
Project Title: Integrated Vocational and Academic Learning Through Tech-Prep
Contact Person: Joan Tiller
Valencia Community College
P.O. Box 3028
Orlando, FL 32802
(407)299-5000, ext. 3327 FAX: (407)872-0689

Program Narrative:

The objectives of the "Integrated Vocational and Academic Learning Through Tech-prep" project are to: increase cross-departmental and inter-institutional faculty cooperation by utilizing vocational and academic faculty and administrators in the design, modification and implementation of post-secondary level academic courses in the areas of science, mathematics, and communication; increase secondary and post-secondary student job placement opportunities by establishing a post-secondary level internship/work experience component in the Tech-Prep program; and to increase local, regional, and national knowledge of successful integrated curriculum and job development strategies through dissemination.

Procedures to implement "Integrated Vocational an Academic Learning Through Tech-Prep" include:

1. offering professional development opportunities which facilitate the design of science, mathematics, and communications courses that integrate academic and vocational competencies;
2. securing private sector partners to sponsor interns in fields which do not traditionally involve apprenticeships;
3. developing new identification, promotion, and recruitment strategies targeting special needs groups;
4. disseminating information about the project;
5. developing media kits that would provide educators with instructions regarding how to operate a comprehensive tech-prep program;
6. completing a research study which documents the project's success.

The goals of the project are to increase tech-prep student performance, completion, and placement rates; to develop new and revised curricula; to increase special needs student participation in tech-prep programs; to develop training workshops; to establish new internship/work experience programs; to develop conference presentations and a consortium-sponsored national conference; to develop and distribute media kits which instruct educators on the "how to's" of operating a successful tech-prep program; and to complete a research study on the project's success.

Fiscal Notes:

"Integrated Vocational and Academic Learning Through Tech-prep" is 74% federally funded and was awarded $498,731 for fiscal year 1994. Non-federal funds for the same year were $173,017. The total project allowance for fiscal year 1994 was $671,748. The time period for the project is January 1, 1994 - December 31, 1997.

EFFECTIVE MODELS OF INTEGRATION:

- **Academy Model—Schools-within-a-School:** *Academies typically operate as a school-within-a-school. Generally, an academy has a number of teachers assigned to the faculty from a variety of content areas (e.g.math, science, english, electronics). Teachers collaborate to form a curriculum around a vocational subject or theme. Because teachers work with each other and students within the Academy for a number of years, this structure facilitates the integration of academic and vocational education. In this model, the Academy develops a close partnership with firms and labor organizations that work in the career area emphasized by the Academy, thus providing a realistic context for instruction.*

- **Apprenticeships:** *Apprenticeships emphasize academic and vocational training as well as on-the-job experiences under the direction of a master craftsperson in the particular career area. Businesses and/or labor organizations join in partnership with high schools to provide a major block of career training in a real-world setting. Students are prepared for entry level employment as well as made aware of the career paths in a particular field.*

- **Career Cluster, Career Paths, and Career Majors:** *These models have moved in a number of different directions. Some high schools have replaced conventional academic and vocational departments with departments organized around career clusters (agriculture, business, public service, health, fashion). With this approach, teachers are assigned to the career department or cluster. A second approach focuses on career paths from which the student may choose. After careful guidance, students select a career path (e.g. agriculture and natural resources; business and marketing; art and communication; education; health, home, and recreation; industrial technologies and engineering; social, human and governmental services) which meets their interests. As a result, they pursue their academic and vocational education with the career path as a backdrop for instruction. The career clusters or career paths encompass entry, middle level and professional level careers.*

- **Combining the planning by academic and vocational teachers to enhance academic content in vocational programs:** *This approach might typically involve broadening vocational courses to include more mathematics or lessons in communications and teamwork or including labor market and job-search information in an introductory technology course.*

EFFECTIVE MODELS OF INTEGRATION:

- **Curriculum alignment**: *modify both the academic and vocational courses horizontally and vertically.*

  Horizontal Alignment—Coordinating Courses: *Academic and vocational teachers "parallel teach" courses in which the themes are linked or supportive. For example, an automotive class may be studying the aspects of the internal combustion engine while a social studies class studies the impact of the automobile on the changing lifestyles in the 20th century.*

  Vertical Alignment:—Creating Sequences of Courses: *Courses related to the health care industry may be linked over series of years so that students are exposed to aspects of science, social policy, communications, interpersonal relationships and career paths in the field. At the senior year, students may spend time in a field experience applying the skills and knowledge which have been learned in a life-like situation.*

- **Incorporating more academic competencies (including basic skills) into vocational courses:** *Vocational teachers might encourage the same writing techniques and standards as used by the English department. The reinforcement of the basic math concepts may be emphasized by all of the vocational courses.*

- **Magnet Schools:** *This model centers its curriculum around a broad career cluster (aviation, business, health, performing arts). The school's curriculum is dominated by the focus of the career area. Many magnet schools have a career focus. Students who come to the school have knowingly selected to study in the broad career area emphasized by the school.*

- **Making academic courses more applied or vocationally relevant:** *This approach might involve taking biology and emphasizing the impact that the bio-agriculture business has on the local economy or on the development of certain strains of plants which resist pests.*

- **Tech-Prep:** *Tech-prep courses are based on a common core of applied academic courses in math, science and communications. They provide technical preparation leading to employment. Tech-prep provides school-to-work opportunities as part of the overall curriculum. The courses are sequential and, at the high school level, are designed to interface with courses of advanced preparation at the community college level. This progression provides for stronger programs with no overlap. Tech-prep education links vocational education programs with appropriate high school academic programs to better prepare graduates for higher education and employment in the technical fields.*

Best District Practices

GLOSSARY OF TERMS

ACADEMY: a school or a school-within-a-school which is dedicated to a particular theme or course of study and which is directly linked to the related business/ labor organizations within the community. Students may take part of their course of study at the school site where learning is developed around the career theme. Other parts of their education may take place in the community and on-the-job.

ACTION-BASED PROJECTS: an integrated curriculum activity which requires students to have a project which fulfills a real need. For example, a local agency may need to have a survey done which the students may do as their action-based project.

APPLIED ACADEMICS: the application of a single course or content area to the world of work.

APPLIED LEARNING: the process of learning or applying the skills, competencies or knowledge learned in a setting which resembles real world situations.

APPRENTICESHIPS: a training program in which the student receives school-based and work-based instruction. On-the-job training is provided and often leads to employment.

ARTICULATION: the process of ensuring that the curriculum and the instructional methodology is consistent and connected through all the grades in a school district. The curriculum for each grade as well as the activities in which the students are engaged should develop skills, knowledge or behaviors which will lead students successfully to the next grade level.

ARTICULATION AGREEMENT: an agreement between two or more educational systems or programs to help students make a smooth transition from one educational level to another without experiencing delays or duplication of learning. The agreement saves students time and money and allows for more advance skills to be taught.

ASSESSMENT: any systematic basis for making inferences about a student's learning progress. The purpose of assessment is to provide timely and meaningful feedback on the performance of a student or group of students to give decision makers information about the progress of students with regard to the instructional program.

BLOCK SCHEDULING: scheduling the middle and/or high school into blocks of time instead of a 40 - 55+ seven period day. The format resembles a college day. Often this is done to facilitate the delivery of an integrated lesson.

CAREER ACADEMY: see academy.

CAREER ASSESSMENT: evaluating the students aptitudes and attitudes related to a variety of careers for the purposes of providing some career guidance or direction.

CAREER AWARENESS: experiences aimed at raising the awareness level in all students of the multitude and variety of careers available.

CAREER EXPLORATION: a variety of experiences and educational opportunities that allow students to explore their interests and develop their attitudes and aptitudes related to a variety of careers.

CAREER GUIDANCE: all of the various types of assistance and support services provided to help individuals in their career development. It includes career awareness, career planning, career decision-making, placement skills and knowledge and

GLOSSARY OF TERMS

Continued

understanding of occupations, educational, and labor market needs, trends, and opportunities.

CAREER MAJORS/ CLUSTERS: the replacement of conventional academic and vocational departments with departments organized around broad career categories such as agriculture, business, or health.

CAREER PATHS: a series of related occupations within the same career field, but requiring different levels of training. A career path implies the concept of lifelong learning and encourages upward mobility through additional training and coursework.

CARL D. PERKINS FUNDS: federal funding which has supported vocational education.

CERTIFICATE OF INITIAL MASTERY: a certificate that represents the standard for general education that every student would be expected to meet regardless of future career and education plans.

CERTIFICATE OF ADVANCED MASTERY: a certificate that represents the standard for education that would be expected of students who were pursuing a career path. The certificate of initial mastery represents the foundation of general education for all students. The student would then work on his or her certificate of advanced mastery which would acknowledge the student's more specialized or advanced training in a particular career path.

COMMON CORE CURRICULUM: the essential skills, competencies and knowledge expected to be possessed by all students at the conclusion of an individual grade, a cluster of grades or upon graduation.

COMPETENCY-BASED LEARNING: an education effort that emphasizes the specification, learning and demonstration of those competencies (knowledge, skills and behavior) that are of central importance to a given task, activity, or career. Competency-based education is designed to prepare youth to successfully transition to post-secondary education and employment.

COOPERATIVE EDUCATION (co-op): placement of students at worksites related to their area of training to gather work experience and to enhance vocational and technical training at the school.

COURSE SEQUENCES: a series of courses which are linked in a common theme or outcome and which become progressively more rigorous and broad as the student moves through the sequence.

CURRICULUM: what is intentionally taught to students in the district, school or classroom; the guides, books and materials that teachers use in teaching students. The elements of curriculum are sequence (the ordering of the learning experiences), continuity (the length of such experiences), scope (the range of learning experiences to be offered), balance (the degree and amount of topics, subjects and learning experiences) and the assessments (the measurement of achievement which results from the learning experience).

CURRICULUM ALIGNMENT: the sequence of learning from grade to grade or throughout the grades; the matching of all of the elements of the instructional program with the goals of the curriculum (e.g. outcomes, materials, resources, professional development, assessments).

GLOSSARY OF TERMS

Continued

EMPLOYABILITY SKILLS: skills that enhance a person's job marketability such as completing forms, developing a resume, preparing for a job interview and analyzing a job market; this can also be expanded to include the types of job preparation necessary to compete successfully for jobs in a particular trade or industry.

FLEXIBLE SCHEDULING: scheduling primarily for middle schools and high schools which allows for teachers to provide integrated instruction as needed. This type of scheduling is less structured than block scheduling.

HIGH SCHOOLS THAT WORK: a multi-state network of high schools sponsored by Southern Regional Education Board. The network's goal is to raise the academic skills and standards of all students. This goal is largely achieved through the promotion of an integrated instruction.

HORIZONTAL COORDINATION: the coordination which occurs between courses when academic and vocational teachers collaborate or engage in "parallel teaching."

INTEGRATION: a coordinated system of enhanced academic and technical education. This system promotes an understanding and application of knowledge and skills that prepares all students for lifelong learning and success in their life's work.

JOBS FOR AMERICA'S GRADUATES: a national non-profit organization that strives to assist high school students with their school-to-career transition. The emphasis is on at-risk students.

JOB SHADOWING: an experience involving the spending of several hours observing one or more people while they work at their jobs. This activity provides students and teachers with an opportunity to see first hand the kinds of jobs and the skills and knowledge required in a certain career field.

JOINT PLANNING PERIODS: common planning periods for groups of teachers who are working on integrating the academic and vocational curriculum. When teachers have the capacity to work collaboratively on planning, curriculum development, delivery of instruction, support for students and assessment of student performance, there is opportunity for a greater degree of success in student learning.

JUNIOR ACHIEVEMENT: a non-profit organization formed to inspire and educate young people to value free enterprise, understand business and economics and be workforce ready. This organization has K - 12 curriculum activities which integrate academic skills with business skills.

K-12 FOCUS: refers to involving or impacting all grades and students from Kindergarten to the 12th grade.

LIFETIME LEARNING: the concept that learning does not end when one completes a formal program or obtains a diploma, certificate or degree. The adult of today can expect to learn and relearn through one's lifetime.

LEVERAGE POINTS: those actions attributed to boards of education because of their legal or positional status in a school district. Included are: setting the mission and vision for the district; establishing the framework for action through the employment of the superintendent, policies, allocating resources, adopting collective bargaining agreements; creating a climate for excellence; ensuring accountability; advocacy for children, public education, specific educational issues and

GLOSSARY OF TERMS

Continued

initiatives and legislative efforts.

MAGNET SCHOOLS: a school which centers its curriculum around a broad career cluster like aviation, business, or the performing arts. It can exist as an elementary, middle or high school.

MENTORSHIP: a formal relationship, as opposed to visits, between a student and a worksite role model who provides support and encouragement to the student. A mentor can help students become accustomed to the rules, norms and expectations of the workplace, and can provide career insight and guidance based on personal career experience.

MISSION: A statement of the business of the school district. A statement of the major purposes of the district.

NATIONAL ALLIANCE OF BUSINESS: a resource for business leaders to find constructive ways to provide input into the major issues of education reform and for educators to involve business leaders.

NATIONAL ALLIANCE FOR RESTRUCTURING EDUCATION: created in 1990 by the National Center on Educational and the Economy, it is a partnership of states, school districts, corporations, foundations, and not-for profit companies committed to creating educational systems that expect high academic standards from all students, while providing them with the opportunities, resources, and thinking skills needed to meet those standards.

NEW STANDARDS PROJECT: a grassroots partnerships of states and urban school districts that is adopting a set of very high national education standards and a new kind of assessment system. This project is run by the National Center on Education and the Economy and the University of Pittsburgh. The goal is to improve the performances of all students.

PARTNERSHIP ACADEMY: see academy.

PERFORMANCE ASSESSMENT: an assessment that engages students inproducing knowledge or completing a task which closely represents what they are likely to face as everyday workers and/or citizens. The assessment must closely connect in some way to real situations and problems. It may take the form of a performance test, a set of observations, a series of open-ended questions, an exhibition, an interview or a portfolio of work.

PORTFOLIO: a record of student learning, containing several samples of student work assembled in a purposeful manner; often includes the student's personal reflection on that work.

PROJECT VANGUARD: a national integration demonstration project by Sonoma State University that trains teachers, administrators, and counselors on how to develop an integrated curriculum.

REGIONAL OCCUPATIONAL CENTERS AND PROGRAMS (ROC/P): an educational center or program which provides vocational and career preparation training to high school students and adults. Courses offered by ROC/Ps cover a wide range of job-related training. Paid and non-paid internships are integral to the curriculum. Programs are conducted in facilities on high school sites, the center, or business sites.

SCHOOL-BASED ENTERPRISES: see "school-based learning."

GLOSSARY OF TERMS

Continued

SCHOOL-BASED LEARNING: business venture created and operated by students within their school. Schools provide entrepreneurial, professional, and technical and academic instruction. School enterprises strengthen the connection between classroom learning and the learning which occurs through participation in the business venture.

SCHOOL-WITHIN-A-SCHOOL: typically, these are smaller, specialized units of teachers and students within a larger, comprehensive high school. Teachers are grouped together and may come from a variety of content areas (e.g. English, math, social studies, science and vocational specialties). The group of teachers stay with a group of students for a series of courses and over a series of years. Generally, the school-within-a-school is based upon a career theme (e.g. health, business, technology, etc.) and the curriculum aligns courses with each other and to a career focus.

SENIOR PROJECT: an alternative or supplement to a formal restructuring of courses of programs to integrate academic and vocational education. The curriculum is structured around the senior project rather than around courses and course sequences. The goal of the senior project is to develop skills in independent work, problem solving and presenting the results and findings to others. The project integrates knowledge and skills learned in both academic and vocational courses.

STUDENTS IN COMMON: organizing the school day so that teachers have the same students. This organizational structure assists in providing an integrated instruction.

TEAM TEACHING: a team of teachers who work collectively to identify points of integration and devise strategies to implement integrated approaches to learning.

TECH-PREP: courses at the high school level which are designed to be sequential with those at the community college level. Students begin an integrated academic and vocational program of study as early as ninth grade. Courses taken during the eleventh and twelfth grade are prerequisites for an established program at the community college level.

TECHNOLOGY-BASED EDUCATION: an integrated curriculum effort which focuses upon the use of technology in the curriculum.

VISION: an ideal description of a school district developed by the board to serve as a "road map" for the development of the district's objectives, activities and the allocation of resources.

VERTICAL COORDINATION: the sequencing of courses over a number of grade spans and content areas to achieve an integrated program of study.

WORK-BASED LEARNING: a competency-based educational experience that coordinates and integrates classroom instruction with structured work-site employment in which the student receives occupational training that advances student knowledge and skills in essential academic requirements.

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